Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

P.O. Box 650820
Sterling, VA 20165-0820
e-mail: forensics@cts-interlab.com
Telephone: +1-571-434-1925
Web site: www.cts-forensics.com

Firearms Examination
Test No. 24-5261 Summary Report

Each sample set contained three known test-fired bullets and four questioned recovered bullets. Participants were asked to examine these items and report their findings. Data were returned from 367 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 set contained three known test-fired bullets and four questioned recovered bullets. Participants were asked to determine if any of the questioned recovered bullets were discharged from the same firearm as the known test-fired bullets.

ITEMS 1, 2, AND 4 (IDENTIFICATION): The bullets in Items 1, 2, and 4 were discharged from a Tanfoglio Witness. Multiple magazines were loaded with Federal American Eagle 9mm Luger 124 grain FMJ ammunition for firing with the Tanfoglio Witness firearm. After the ammunition was expended, the bullets were collected together in batches. This process was repeated until the required number was produced. Out of each batch, the necessary number of bullets were selected and marked with a "1" (three bullets), "2" (one bullet), and "4" (one bullet), then sealed into their respective boxes.

ITEMS 3 AND 5 (ELIMINATION): The bullets in Items 3 and 5 were discharged from a Hi-Point Model 995. Multiple magazines were loaded with Federal American Eagle 9mm Luger 124 grain FMJ ammunition for firing with the Hi-Point Model 995 firearm. After the ammunition was expended, the bullets were collected together in batches. This process was repeated until the required number was produced. Out of each batch, the necessary number of bullets were selected and marked with a "3" (one bullet) and "5" (one bullet), then sealed into their respective boxes.

SAMPLE SET ASSEMBLY: For each sample set, Items 1, 2, and 4 of the same identification batch, along with Items 3 and 5 of the same elimination batch were placed into a pre-labeled sample set box.

VERIFICATION: During test production, 10% of the bullets from each batch were selected and intercompared to confirm that markings were consistent. Predistribution results were consistent with each other and the manufacturer's preparation information.

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Summary Comments

This test was designed to allow participants to assess their proficiency in a comparison of recovered bullets. Participants were supplied with three known test-fired bullets (Item1) and four questioned recovered bullets (Items 2 through 5). The Items 2 and 4 questioned bullets were discharged from the same firearm as the Item 1 known test-fired bullets. The Items 3 and 5 questioned bullets were discharged from a different firearm. Refer to the Manufacturer's Information for preparation details.

In Table 1 Examination Results, 365 of the 367 responding participants (99%) identified Items 2 and 4 and eliminated Items 3 and 5 as having been discharged from the same firearm as the Item 1 bullets. Of the two remaining participants, one participant identified Items 3 and 4 and eliminated Items 2 and 5 as having been discharged from the same firearm as the Item 1 bullets. The remaining participant was inconclusive for Items 2 and 4 and eliminated Items 3 and 5 as having been discharged from the same firearm as the Item 1 bullets.

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Examination Results

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

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
24X2KE	Yes	No	Yes	No	47CZ9T	Yes	No	Yes	No
2984KN	Yes	No	Yes	No	489TPX	Yes	No	Yes	No
29UJ6K	Yes	No	Yes	No	4BN2DW	Yes	No	Yes	No
2HVTPP	Yes	No	Yes	No	4ELKBP	Yes	No	Yes	No
2HXF83	Yes	No	Yes	No	4FDPLN	Yes	No	Yes	No
2LFTRQ	Yes	No	Yes	No	4FG8NT	Yes	No	Yes	No
2MRH7W	Yes	No	Yes	No	4FMBQK	Yes	No	Yes	No
2QMDPV	Yes	No	Yes	No	4GF4L3	Yes	No	Yes	No
2V3YH3	Yes	No	Yes	No	4L8FGY	Yes	No	Yes	No
2VJWRU	Yes	No	Yes	No	4R8794	Yes	No	Yes	No
2ZFJPN	Yes	No	Yes	No	4U49PT	Yes	No	Yes	No
33F8J4	Yes	No	Yes	No	62E3UL	Yes	No	Yes	No
3498AN	Yes	No	Yes	No	62YURD	Yes	No	Yes	No
366D2F	Yes	No	Yes	No	68KM6X	Yes	No	Yes	No
38TRQP	Yes	No	Yes	No	69G3FA	Yes	No	Yes	No
3C6TVU	Yes	No	Yes	No	6AAWBT	Yes	No	Yes	No
3GZK4Q	Yes	No	Yes	No	6APFVP	Yes	No	Yes	No
3HBETY	Yes	No	Yes	No	6BQ7AK	Yes	No	Yes	No
3JQNRR	Yes	No	Yes	No	6E297N	Yes	No	Yes	No
3Q6RJQ	Yes	No	Yes	No	6EL2QY	No	Yes	Yes	No
3TCWAU	Yes	No	Yes	No	6G8NJL	Yes	No	Yes	No
3U4ZYU	Yes	No	Yes	No	6GC7J7	Yes	No	Yes	No
3YGTWE	Yes	No	Yes	No	6JYK9F	Yes	No	Yes	No

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TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
6N9V83	Yes	No	Yes	No	8CP6EA	Yes	No	Yes	No
6RBWAK	Yes	No	Yes	No	8D23LZ	Yes	No	Yes	No
6WXXZW	Yes	No	Yes	No	8HEMTL	Yes	No	Yes	No
6XZJVD	Yes	No	Yes	No	8K3CWY	Yes	No	Yes	No
73KXZA	Yes	No	Yes	No	8LCDQK	Yes	No	Yes	No
76UTXV	Yes	No	Yes	No	8MBANV	Yes	No	Yes	No
7BGK6N	Yes	No	Yes	No	8PFYPH	Yes	No	Yes	No
7FXWDQ	Yes	No	Yes	No	8PHKKY	Yes	No	Yes	No
7G4NWR	Yes	No	Yes	No	8Q86YG	Yes	No	Yes	No
7H4EBM	Yes	No	Yes	No	8RN6BJ	Yes	No	Yes	No
7K6PYA	Yes	No	Yes	No	8Y6QCB	Yes	No	Yes	No
7LXM6V	Yes	No	Yes	No	8YJCMX	Yes	No	Yes	No
7MUNLK	Yes	No	Yes	No	8ZXNGW	Yes	No	Yes	No
7NMLQ7	Inc	No	Inc	No	92M872	Yes	No	Yes	No
7PERYJ	Yes	No	Yes	No	94BPZL	Yes	No	Yes	No
7PGLHP	Yes	No	Yes	No	98A32D	Yes	No	Yes	No
7QU2ZX	Yes	No	Yes	No	9KHXZA	Yes	No	Yes	No
7RNUVG	Yes	No	Yes	No	9RJ8FE	Yes	No	Yes	No
7T2JYT	Yes	No	Yes	No	9T9H4L	Yes	No	Yes	No
7V8M8J	Yes	No	Yes	No	9TCZBX	Yes	No	Yes	No
7ZEFVM	Yes	No	Yes	No	9UZNEK	Yes	No	Yes	No
87ZTDM	Yes	No	Yes	No	9YW72D	Yes	No	Yes	No
89QV3M	Yes	No	Yes	No	A2KRFL	Yes	No	Yes	No
89RN3F	Yes	No	Yes	No	A3WWKX	Yes	No	Yes	No
8A2QQZ	Yes	No	Yes	No	ACGZUH	Yes	No	Yes	No
8C792P	Yes	No	Yes	No	AE79ZD	Yes	No	Yes	No

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TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
AEN8BP	Yes	No	Yes	No	CPXJGH	Yes	No	Yes	No
AEPBQL	Yes	No	Yes	No	CV2RGJ	Yes	No	Yes	No
AFFEFL	Yes	No	Yes	No	CV9TQZ	Yes	No	Yes	No
AHQ2CF	Yes	No	Yes	No	CXD8BK	Yes	No	Yes	No
AL9J9Q	Yes	No	Yes	No	CZLDXL	Yes	No	Yes	No
AMHJCC	Yes	No	Yes	No	D4EYXM	Yes	No	Yes	No
ANVXXZ	Yes	No	Yes	No	D4FPCH	Yes	No	Yes	No
ARD6DM	Yes	No	Yes	No	D4K3ZE	Yes	No	Yes	No
AT69VM	Yes	No	Yes	No	DEXDZP	Yes	No	Yes	No
AUJKUR	Yes	No	Yes	No	DG4UF9	Yes	No	Yes	No
AW6KRL	Yes	No	Yes	No	DGKZMB	Yes	No	Yes	No
AYVMGM	Yes	No	Yes	No	DQQWGF	Yes	No	Yes	No
B42LLK	Yes	No	Yes	No	DR4ENR	Yes	No	Yes	No
BA8FG2	Yes	No	Yes	No	DX9DYH	Yes	No	Yes	No
BCGAFM	Yes	No	Yes	No	DYHERH	Yes	No	Yes	No
BEJCYW	Yes	No	Yes	No	DZXJNV	Yes	No	Yes	No
BJV9TY	Yes	No	Yes	No	E32KCY	Yes	No	Yes	No
BR4R3W	Yes	No	Yes	No	E4UHHK	Yes	No	Yes	No
BV43XW	Yes	No	Yes	No	E6Q7Q8	Yes	No	Yes	No
BVQEPH	Yes	No	Yes	No	E7FGEF	Yes	No	Yes	No
BWK8K2	Yes	No	Yes	No	ECNLR9	Yes	No	Yes	No
BZ8H3E	Yes	No	Yes	No	EM7FR9	Yes	No	Yes	No
CDQRXJ	Yes	No	Yes	No	ENYDWU	Yes	No	Yes	No
CEY4FK	Yes	No	Yes	No	EPEBPU	Yes	No	Yes	No
CK86WH	Yes	No	Yes	No	EPQALN	Yes	No	Yes	No
CLZ2LC	Yes	No	Yes	No	ETCY4F	Yes	No	Yes	No

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TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
ETQHQX	Yes	No	Yes	No	GFGJWH	Yes	No	Yes	No
F23W9U	Yes	No	Yes	No	GGT7MJ	Yes	No	Yes	No
F3CTRD	Yes	No	Yes	No	GQWEAW	Yes	No	Yes	No
F446C4	Yes	No	Yes	No	GXV6BD	Yes	No	Yes	No
F8T9AH	Yes	No	Yes	No	HK6QTV	Yes	No	Yes	No
F93HX9	Yes	No	Yes	No	HWLBED	Yes	No	Yes	No
FARUQM	Yes	No	Yes	No	HYRQRB	Yes	No	Yes	No
FAUEM3	Yes	No	Yes	No	J74C68	Yes	No	Yes	No
FD9YKB	Yes	No	Yes	No	J7KJDA	Yes	No	Yes	No
FGVQKK	Yes	No	Yes	No	J8FXV9	Yes	No	Yes	No
FHP849	Yes	No	Yes	No	JC7BUB	Yes	No	Yes	No
FJFMYC	Yes	No	Yes	No	JCRUPA	Yes	No	Yes	No
FJH79U	Yes	No	Yes	No	JFNH6W	Yes	No	Yes	No
FKWLFG	Yes	No	Yes	No	JFR7LA	Yes	No	Yes	No
FNC9UL	Yes	No	Yes	No	JJPQ97	Yes	No	Yes	No
FNDXJC	Yes	No	Yes	No	JJRC6M	Yes	No	Yes	No
FRUENB	Yes	No	Yes	No	JK27WF	Yes	No	Yes	No
FTC7UE	Yes	No	Yes	No	JKFWH6	Yes	No	Yes	No
FU4AJF	Yes	No	Yes	No	JUBMED	Yes	No	Yes	No
FUJNTA	Yes	No	Yes	No	JX9A4V	Yes	No	Yes	No
FWBM79	Yes	No	Yes	No	JXBUYB	Yes	No	Yes	No
G3B9NA	Yes	No	Yes	No	JY28AG	Yes	No	Yes	No
G44ER8	Yes	No	Yes	No	K2N4G8	Yes	No	Yes	No
G4PXQM	Yes	No	Yes	No	KBBXXB	Yes	No	Yes	No
G9WL4N	Yes	No	Yes	No	KCL4UC	Yes	No	Yes	No
GACKLT	Yes	No	Yes	No	KD2ET4	Yes	No	Yes	No

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TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
KDUCYP	Yes	No	Yes	No	MUDXA7	Yes	No	Yes	No
KED39A	Yes	No	Yes	No	N6R9K3	Yes	No	Yes	No
KJP2NA	Yes	No	Yes	No	N8J6AW	Yes	No	Yes	No
KQ7LP2	Yes	No	Yes	No	NBYP34	Yes	No	Yes	No
KWBHBL	Yes	No	Yes	No	NFE8C9	Yes	No	Yes	No
L7VW6B	Yes	No	Yes	No	NL4KDW	Yes	No	Yes	No
LC2ME9	Yes	No	Yes	No	NLGC7D	Yes	No	Yes	No
LCJUDY	Yes	No	Yes	No	NMBYK3	Yes	No	Yes	No
LD98VG	Yes	No	Yes	No	NNL4XQ	Yes	No	Yes	No
LDRQ3A	Yes	No	Yes	No	NNNM43	Yes	No	Yes	No
LJZ6V7	Yes	No	Yes	No	NTFXVR	Yes	No	Yes	No
LJZEGB	Yes	No	Yes	No	NUEWEZ	Yes	No	Yes	No
LMWXHA	Yes	No	Yes	No	NUXRXM	Yes	No	Yes	No
LMZGPL	Yes	No	Yes	No	NY87H8	Yes	No	Yes	No
LNTFF6	Yes	No	Yes	No	P2BZW4	Yes	No	Yes	No
LQL3H9	Yes	No	Yes	No	P2MW39	Yes	No	Yes	No
LRBYUP	Yes	No	Yes	No	P33783	Yes	No	Yes	No
LUM4LC	Yes	No	Yes	No	P3JHP8	Yes	No	Yes	No
LW4H26	Yes	No	Yes	No	PBXYN9	Yes	No	Yes	No
LW94J8	Yes	No	Yes	No	PEVKB6	Yes	No	Yes	No
M476D7	Yes	No	Yes	No	PEY3GG	Yes	No	Yes	No
M786D3	Yes	No	Yes	No	PF9C8T	Yes	No	Yes	No
M7P4NE	Yes	No	Yes	No	PJ9LC4	Yes	No	Yes	No
M8YBM2	Yes	No	Yes	No	PLXP9G	Yes	No	Yes	No
MQHTA9	Yes	No	Yes	No	PM3MAB	Yes	No	Yes	No
MQWJUD	Yes	No	Yes	No	PMCAZ7	Yes	No	Yes	No

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TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
PQ6FA2	Yes	No	Yes	No	T2VBZR	Yes	No	Yes	No
Q2NA3A	Yes	No	Yes	No	T6KBL4	Yes	No	Yes	No
Q4AVVW	Yes	No	Yes	No	T76DZ3	Yes	No	Yes	No
Q4R32E	Yes	No	Yes	No	TAQ4GY	Yes	No	Yes	No
Q72UAV	Yes	No	Yes	No	TGNX97	Yes	No	Yes	No
QAFE94	Yes	No	Yes	No	TPKN6A	Yes	No	Yes	No
QERHY7	Yes	No	Yes	No	TQXEV6	Yes	No	Yes	No
QJM6Z8	Yes	No	Yes	No	TQZX3G	Yes	No	Yes	No
QLTRA6	Yes	No	Yes	No	TR7M36	Yes	No	Yes	No
QRWUE6	Yes	No	Yes	No	TTLJV4	Yes	No	Yes	No
QVHF7T	Yes	No	Yes	No	TWLVQ4	Yes	No	Yes	No
QVLXD4	Yes	No	Yes	No	TYU6M8	Yes	No	Yes	No
QWAEKQ	Yes	No	Yes	No	U37AU2	Yes	No	Yes	No
QWPVFK	Yes	No	Yes	No	U7JART	Yes	No	Yes	No
QZDA4U	Yes	No	Yes	No	U82YGZ	Yes	No	Yes	No
R48QUT	Yes	No	Yes	No	UBYUP2	Yes	No	Yes	No
RGDNW9	Yes	No	Yes	No	UD7YUB	Yes	No	Yes	No
RGF73J	Yes	No	Yes	No	UFW2JC	Yes	No	Yes	No
RGVLCE	Yes	No	Yes	No	UHVPR7	Yes	No	Yes	No
RHMN2E	Yes	No	Yes	No	UJVF72	Yes	No	Yes	No
RJFNRY	Yes	No	Yes	No	ULH9T4	Yes	No	Yes	No
RJZ682	Yes	No	Yes	No	UN6X2M	Yes	No	Yes	No
RLCTZD	Yes	No	Yes	No	UPGKN4	Yes	No	Yes	No
RVDH93	Yes	No	Yes	No	UQU3X2	Yes	No	Yes	No
RYBUDE	Yes	No	Yes	No	UV6B6X	Yes	No	Yes	No
T2AJ32	Yes	No	Yes	No	UXE3CT	Yes	No	Yes	No

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TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
UXTPMF	Yes	No	Yes	No	X4A8UM	Yes	No	Yes	No
UXTRDK	Yes	No	Yes	No	X89F7A	Yes	No	Yes	No
V27PK8	Yes	No	Yes	No	X8M42A	Yes	No	Yes	No
V69VXR	Yes	No	Yes	No	X92HMX	Yes	No	Yes	No
V9RU92	Yes	No	Yes	No	XCZP9V	Yes	No	Yes	No
VBX8YF	Yes	No	Yes	No	XH7H3Q	Yes	No	Yes	No
VEXJUF	Yes	No	Yes	No	XNEZJR	Yes	No	Yes	No
VJRDU3	Yes	No	Yes	No	XTALK3	Yes	No	Yes	No
VM8UYZ	Yes	No	Yes	No	XVWBQ2	Yes	No	Yes	No
VQ3L8W	Yes	No	Yes	No	XYWLM2	Yes	No	Yes	No
VTF77Y	Yes	No	Yes	No	Y2HM6U	Yes	No	Yes	No
VV2TYL	Yes	No	Yes	No	Y2XV93	Yes	No	Yes	No
VZETVD	Yes	No	Yes	No	Y7V9CF	Yes	No	Yes	No
W4RZN6	Yes	No	Yes	No	Y83MJL	Yes	No	Yes	No
W6LJXJ	Yes	No	Yes	No	Y877PW	Yes	No	Yes	No
W6P26U	Yes	No	Yes	No	Y9CMUU	Yes	No	Yes	No
W8A6HU	Yes	No	Yes	No	YAQ94W	Yes	No	Yes	No
WD2FMQ	Yes	No	Yes	No	YCWUV3	Yes	No	Yes	No
WLAYVN	Yes	No	Yes	No	YE4XXQ	Yes	No	Yes	No
WLCJR4	Yes	No	Yes	No	YGVWCP	Yes	No	Yes	No
WQ6NHM	Yes	No	Yes	No	YJXRVR	Yes	No	Yes	No
WR4M2V	Yes	No	Yes	No	YKRP2D	Yes	No	Yes	No
WRWK8G	Yes	No	Yes	No	YP6CUX	Yes	No	Yes	No
WYYP48	Yes	No	Yes	No	YW6PX8	Yes	No	Yes	No
WZ9YRX	Yes	No	Yes	No	Z3P3CZ	Yes	No	Yes	No
WZVAQ7	Yes	No	Yes	No	Z7PBJV	Yes	No	Yes	No

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TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
Z8XPNG	Yes	No	Yes	No					
ZAPN2E	Yes	No	Yes	No					
ZBGMFD	Yes	No	Yes	No					
ZDLHQ3	Yes	No	Yes	No					
ZJBY4T	Yes	No	Yes	No					
ZMR9LR	Yes	No	Yes	No					
ZT2BP8	Yes	No	Yes	No					
ZTHG2Q	Yes	No	Yes	No					
ZYRLZ7	Yes	No	Yes	No					

Response Summary

Participants: **367**

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

Responses	Item 2	Item 3	Item 4	Item 5
Yes	**365** ***(99.5%)***	**1** ***(0.3%)***	**366** ***(99.7%)***	**0** ***(0.0%)***
No	**1** ***(0.3%)***	**366** ***(99.7%)***	**0** ***(0.0%)***	**367** ***(100.0%)***
Inc	**1** ***(0.3%)***	**0** ***(0.0%)***	**1** ***(0.3%)***	**0** ***(0.0%)***

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Conclusions

TABLE 2

WebCode	Conclusions
24X2KE	Items 2 and 4 were fired in the same firearm as the item 1 test fires. Items 3 and 5 were fired in a second firearm. Items 3 and 5 are consistent with bullets from ammunition designated 9mm Luger. A list of makes of firearms that may have fired each these items includes but is not limited to: Hi-Point Firearms.
2984KN	When comparing item 1 against item 2, the result is positive since the marks coincide. In the comparison of item 1 against item 3, the result is negative since the marks are totally different. Item 1 against item 4 is positive Item 1 against item 5 is again negative. After the photographic series, the bullets were returned to their original packaging with their respective chain of custody.
29UJ6K	The Item 2 and 4 bullets were identified, within the limits of practical certainty, as having been fired by the same firearm used to generate the Item 1 test fired bullets. The Item 3 and 5 bullets were identified, within the limits of practical certainty, as having been fired by the same firearm. The Item 3 and 5 bullets were not fired by the firearm used to generate the Item 1 test fired bullets.
2HVTPP	Item 1-2 and 1-4 were both fired by the same weapon that fired the tests in item 1-1. IDENTIFICATION. Item 1-3 and 1-5 were both fired by the same unknown weapon capable of chambering 38/9MM caliber ammunition, not the weapon that fired the tests in item 1-1. EXCLUSION
2HXF83	The item 2 and the item 4 bullets are identified as having been fired in the same firearm that fired the item 1A, 1B and 1C bullets. The item 3 and 5 bullets are eliminated as having been fired in the same firearm that fired the item 1A, 1B, 1C, 2 and 4 bullets. The item 3 and 5 bullets are identified as having been fired in the same unknown firearm.
2LFTRQ	Submissions 001-2 and 001-4 were excluded as originating from the same source that fired submissions 001-3 and 001-5 based on class characteristics (source exclusion). Submission 001-2 was microscopically compared to submission 001-4. Based on similar class characteristics and sufficient agreement of individual characteristics, submissions 001-2 and 001-4 are determined to have originated from the same source (source identification). Submission 001-3 was microscopically compared to submission 001-5. Based on similar class characteristics and sufficient agreement of individual characteristics, submissions 001-3 and 001-5 are determined to have originated from the same source (source identification). Submission 001-3 and 001-5 were excluded as originating from the same source as test fires 001-1 based on class characteristics (source exclusion). Submissions 001-2 and 001-4 were microscopically compared to test-fire 001-1b. Based on similar class characteristics and sufficient agreement of individual characteristics, submissions 001-2 and 001-4 were determined to have originated from the same source as submission 001-1 test-fires (source identification).
2MRH7W	Items 2 and 4 were identified microscopically as having been fired from 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. Items 3 and 5 were microscopically eliminated as having been fired from the same firearm that reportedly fired the Item 1 test fires due to disagreement of discernible class characteristics. Items 3 and 5 were identified microscopically as having been fired from the same unknown firearm based on agreement of the combination of individual characteristics and all discernible class characteristics. Visual and microscopic examination of Items 3 and 5 revealed them to be 38 / 9mm caliber-class bullets fired from a firearm with a rifling pattern of eight (8) lands and grooves with a right twist. The

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TABLE 2

WebCode	Conclusions
	size, weight and configuration of Items 3 and 5 are most consistent with bullets typically found loaded in 9mm Luger cartridges. Among the more common firearms that could have possibly fired Items 3 and 5 include, but are not limited to, the following: Hi-Point Firearms brand of 9mm Luger semi-automatic pistol; Hi-Point Firearms brand of 9mm Luger semi-automatic carbine rifle or Hi-Point Firearms brand of 9mm Luger semi-automatic rifle. The list of possible firearms was generated using an in-house expanded version of the General Rifling Characteristics (GRC) Database created by the Federal Bureau of Investigation. This is not meant to be an all-inclusive list but rather an investigative aide; and any suspect firearm(s) of the appropriate caliber-class should be submitted for comparison; however, a complete list of the search results will be maintained in the case file. Current Integrated Ballistics Identification System (IBIS) / BrassTRAX technology in this laboratory is not capable of bullet imaging; therefore, no entry was made. All evidence items are being returned.
2QMDPV	The bullets (Exhibits 002 - 005) were microscopically compared to the test fired bullets from the Tanfoglio pistol (Exhibit 001). The two bullets (Exhibit 002 and 004) bear the same class characteristics, as well as, sufficient reproducing individual characteristics for an identification as having been fired from the Tanfoglio pistol. The two bullets (Exhibits 003 and 005) were determined to be most consistent with 38 caliber class ammunition (which includes 9mm) and bear eight lands and grooves with a right twist. A list of possible manufacturers from the FBI GRC Database with class characteristics similar to these bullets include, but are not limited to, the following firearm manufacturers: Charter Arms and Hi-Point. This is a partial list containing the names of firearm manufacturers most commonly submitted to the laboratory. For a complete list, contact the Firearms Section. Any firearm bearing similar class characteristics should be considered. The two 38 caliber class bullets (Exhibits 003 and 005) bear different class characteristics from the bullets test fired from the Tanfoglio pistol (Exhibit 001); therefore, they could be eliminated as having been fired from this pistol. The two 38 caliber class bullets (Exhibits 003 and 005) bear the same class characteristics, as well as, sufficient reproducing individual characteristics for an identification as having been fired in the same unknown firearm.
2V3YH3	Item #2 and Item #4 were microscopically compared to Item #1 and an identification was made. Item #2 and Item #4 were fired from the same firearm as Item #1. Item #3 and Item #5 were microscopically compared to each other and were identified as having been fired from the same firearm - not submitted.
2VJWRU	1. The bullet projectiles marked E-1 to E-3 (Item 1), are 9mm caliber, with rifling to the right (R-6) and the bullet projectiles marked E-4 (Item 2) and E-6 (Item 4), were shot by the same firearm, (Identification). [Initials] July/30/2024 2. The bullet projectiles marked E-5 (Item 3) and E-7 (Item 5), are 9mm caliber, with rifling to the right (R-8) and they were shot by the same firearm (Identification). [Initials] July/30/2024
2ZFJPN	Based on agreement of discernable class characteristics and sufficient corresponding individual markings observed, Items 02 and 04 (bullets) were identified as having been fired from the firearm that fired the three bullets in Item 01.
33F8J4	Items 2 and 4 are identified as having been fired in the same firearm that fired items 1A, 1B and 1C. Items 3 and 5 are eliminated from having been fired in the same firearm that fired items 1A, 1B and 1C. Items 3 and 5 are identified as having been fired in the same unknown firearm.
3498AN	I am of the opinion that questioned recovered bullets 2 and 4 were discharged from the same firearm as the known test fired bullets (item 1). I am of the opinion that questioned recovered bullets 3 and 5 were not discharged from the same firearm as the known test fired bullets (item

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TABLE 2

WebCode	Conclusions
	1).
366D2F	Items from #1 have been compared microscopically with Items #2 and #4. Based on agreement of all discernible class characteristics and a sufficient agreement of corresponding individual characteristics they have been identified as having been fired from the same firearm. Due to differences in class characteristics, Items 1,2 and 4 are eliminated from being fired from the same firearm as Items #3 and #5. Items #3 and #5 have been compared microscopically with each other. Based on agreement of all discernible class characteristics and a sufficient agreement of corresponding individual characteristics they have been identified as having been fired from the same firearm.
38TRQP	Item 1 (three bullets), Item 2 (a bullet), and Item 4 (a bullet) were identified ^1 as having been fired by the same firearm. Item 3 (a bullet) and Item 5 (a bullet) were fired from a different firearm than Items 1, 2, and 4. It could not be determined if Item 3 and Item 5 were fired by the same firearm. ^2^ 1Source 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. ^2 The comparative examinations showed agreement of individual characteristics, but insufficient for an identification. The comparative examinations were inconclusive.
3C6TVU	Exhibits 1.2 and 1.4 were fired from ex.1.1 (9mm caliber Tanfoglio Witness, suspect's weapon) based on sufficient agreement of individual characteristics. Exhibits 1.3 and 1.5 were fired from the same unknown 9mm caliber firearm based on sufficient agreement of individual characteristics. The following is an investigative lead only and not intended to exclude all other makes of firearms. Based on the class characteristics of exhibit 1.3 and 1.5, the possible firearm is a 9mm caliber Hi-Point pistol.
3GZK4Q	The bullets Items 2 and 4 were microscopically identified as having been fired from the same firearm as Item 1a (test). Items 2 and 4 were determined to be of 9mm Luger caliber displaying rifling characteristics of six lands and grooves, right twist. The bullets Items 3 and 5 were microscopically identified as having been fired from the same firearm. Items 3 and 5 were not fired from the same firearm as Item 1a (test). Items 3 and 5 were determined to be of 9mm caliber displaying rifling characteristics of eight lands and grooves, right twist. Manufacturers of firearms with similar rifling characteristics include but are not limited to Hi-Point.
3HBETY	[No Conclusions Reported.]
3JQNRR	Microscopic examination and comparison of fired bullets Items 2 and 4 to the test fired bullets Item 1 reveals agreement of all discernable class characteristics along with areas of corresponding individual characteristics establishing that fired bullets Items 2 and 4 were fired from the same firearm as the test fired bullets Item 1. (Identification) Fired bullets 3 and 5 were not fired from the same firearm as the test fired bullets Item1 nor the fired bullets Items 2 and 4, eliminated by class characteristics. (Elimination)
3Q6RJQ	Item 2 was compared to Items 1A, 1B, and 1C using a comparison microscope. Agreement of class and individual characteristics sufficient for identification was observed. Item 2 was fired in the same firearm that fired Items 1A, 1B, and 1C. Item 4 was compared to Item 2 and Items 1A, 1B, and 1C using a comparison microscope. Agreement of class and individual characteristics sufficient for identification was observed. Item 4 was fired in the same firearm that fired Items 1A, 1B, and 1C. Item 3 was compared to Item 1A using a comparison microscope. Significant disagreement in class characteristics (number of lands and grooves and groove impression widths) was observed to conclude Item 3 was fired in a different firearm than Items 1A, 1B, and 1C. Item 5 was compared to Item 1A using a comparison microscope. Significant disagreement in class characteristics (number of lands and grooves and groove

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TABLE 2

WebCode	Conclusions
	impression widths) was observed to conclude Item 5 was fired in a different firearm than Items 1A, 1B, and 1C.
3TCWAU	The submitted fired bullets, Items 1A, 1B, 1C, 2, and 4, were identified as having been fired from the same firearm. The submitted fired bullets, Items 3 and 5, were identified as having been fired from the same firearm. The submitted fired bullets, 1A, 1B, 1C, 2, and 4, were eliminated as having been fired from the same firearm as the submitted fired bullets, Items 3 and 5. The submitted fired bullets, Items 3 and 5, are consistent with being .38 caliber class bullets that were fired from a firearm having eight lands and grooves, right twist. Possible calibers would include, but not be limited to, 9mm Luger. A list of possible firearms would include, but not be limited to, the following: American Derringer, BJT, Cobra Enterprises, Feather Industries, Hi Point, Lorcin, Rohrbaugh, RPB Industries, Ruger, Stallard Arms, Standard Arms, and Talon.
3U4ZYU	The two bullets marked #2 and #4 were compared microscopically against test bullets (#1) and identified as having been discharged from the same firearm. The two bullets marked #3 and #5 were compared microscopically against test bullets (#1) and eliminated as having been discharged from the same firearm. The two bullets marked #3 and #5 were compared microscopically against each other, however, the results of the microscopic comparisons were inconclusive.
3YGTWE	The projectiles in items 2 and 4 were fired in the same gun as the projectiles in item 1, based on agreement observed in individual characteristics. The projectiles in items 3 and 5 were not fired in the same gun as the projectiles in item 1, based on differences observed in class characteristics.
47CZ9T	Items #1 (test fires) and Items #2 and #4 were identified as having been discharged from the same firearm (Tanfoglio). Items #3 and #5 were not discharged from Item #1 (Tanfoglio pistol).
489TPX	Two questioned recovered bullets (Item 2,4) were discharged from the same firearm as the known test-fired bullets(Item 1). Two other questioned recovered bullets (Item 3,5) were NOT discharged from the same firearm as the known test-fired bullets(Item 1).
4BN2DW	1. The bullet marked E-1 to E-3, corresponding in Item 1, the bullet marked E-4, corresponding in Item 2, and the bullet marked E-6, corresponding in Item 4, are 9mm caliber, with right striation (R-6) and were fired by the same firearm (Identification). [Initials] 20/ago/2024 2. The bullet marked E-5, corresponding in Item 3 and the bullet marked E-7, corresponding in Item 5, are 9mm caliber, with right striation (R-8) and were fired by the same firearm (Identification). [Initials] 21/ago/2024
4ELKBP	In the opinion of this examiner, Item 2 and Item 4, were fired in the submitted firearm (Item 1). In the opinion of this examiner, Item 3 and Item 5 were fired in the same unknown firearm.
4FDPLN	I examined the fired bullets marked 360069/24 A2-A5 and test fired bullets marked 069TB1A-TB1C and compared the individual and class characteristics markings transferred to them by firearm components during the firing process using a comparison microscope and found: 2.1 The bullets marked 360069/24 A2 and A4 were fired from the same firearm which fired the test bullets 069TB1A-TB1C. 2.2 The bullets marked 360069/24 A3 and A5 were fired in an unknown firearm.
4FG8NT	questioned bullets 2 and 4 were fired from the suspect firearm. questioned bullets 3 and 5 were excluded from suspect firearm.
4FMBQK	Bullet Analysis: Methodology: Physical (Visual Examination), Electronic Balance/Caliper/Digital Micrometer, Microscopy (Comparison Microscope). Items 2, 3, 4, and 5 are 38 caliber class

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TABLE 2

WebCode	Conclusions
	bullets based upon the diameter. Opinion/Interpretation: Items 2, 3, 4, and 5 are consistent with bullets loaded in 9mm Luger, .357 SIG, .38 Special, and .357 Magnum caliber cartridges based upon the weight and style. Items 2 and 4, the bullets, were fired through the barrel of Item 1, the Tanfoglio pistol, based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the bullets, were not fired through the barrel of Item 1, the Tanfoglio pistol, based upon different class characteristics.
4GF4L3	1) Exhibit 1 contains three test fired FMJ, copper jacketed, 9mm caliber bullets. The firearm was not submitted with the test fires for examination. The submitter indicated that these projectiles were fired from a Tanfoglio brand Witness model pistol in caliber 9x19mm using Federal American Eagle 124gr ammunition. Each bullet of Exhibit 1 contains six lands and grooves with a right hand twist. 2) Exhibits 2 through 5 each contain one fired FMJ, copper jacketed, 9mm caliber bullet. Exhibits 2 and 4 contain six lands and grooves with a right hand twist and Exhibits 3 and 5 contain eight lands and grooves with a right hand twist. 3) Exhibits 1 through 5 are suitable for microscopic comparison. Intercomparison revealed the following: a) Exhibits 2 and 4 were fired from the same firearm as Exhibit 1 due to an agreement of class characteristics and sufficient agreement of individual characteristics. b) It could not be determined if Exhibits 3 and 5 were fired from the same firearm due to an observed agreement of class characteristics, but an insufficient agreement of individual characteristics. c) Exhibits 3 and 5 were not fired from the same firearm as Exhibit 1 due to a disagreement of class characteristics.
4L8FGY	The examination of the recovered bullets under a comparison microscope, allows us to conclude that the questioned bullets of the item 2 and 4 were fired form the suspect's firearm. The examination also showed that items 3 and 5 were fired from a second firearm.
4R8794	Items 002 and 004 were identified as having been fired in the same firearm that fired Item 001 based on the correspondence of class and individual characteristics. Items 003 and 005 were eliminated as having been fired in the same firearm that fired Items 001, 002, and 005 based on different class characteristics. Items 003 and 005 could not be identified or eliminated as having been fired from the same unknown firearm based on a lack of corresponding individual characteristics.
4U49PT	Deformed bullets (2, 4) and test-fired bullets (A1, A2, A3) are identified as having been fired from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3, 5) are identified as having been fired from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3, 5) are ELIMINATED as having been fired from the SAME gun as test-fired bullets (A1, A2, A3) and deformed bullets (2, 4) based on the observed disagreement of class characteristics.
62E3UL	The four bullets (Items 2-5) were microscopically compared to the bullets discharged from the Tanfoglio Witness firearm (Item 1). The two bullets (Items 2 and 4) bear the same class characteristics, as well as, sufficient reproducing individual characteristics for an identification as having been fired from the Tanfoglio Witness firearm. The two bullets (Items 3 and 5) bear different class characteristics and could be eliminated as having been fired from the Tanfoglio Witness firearm. The two bullets (Items 3 and 5) were microscopically compared to each other. They (Items 3 and 5) bear the same class characteristics and some reproducing individual characteristics; however, they lack sufficient reproducing individual characteristics for an identification or an elimination as having been fired from the same unknown firearm.

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TABLE 2

WebCode	Conclusions
62YURD	RESULTS: PROJECTILES: Items 1, 2, and 4. Items 2 and 4 were Identified to the Item 1 bullets. Items 3 and 5. These bullets were Identified to each other. Items 3 and 5 have design features consistent with bullets loaded in 9mm Luger caliber cartridges, and they display rifling characteristics consistent with some firearms by Hi-Point, RG, and Charter Arms. Items 3 and 5 were Eliminated from Items 1, 2, and 4 based on a difference in class characteristics.
68KM6X	The questioned recovered bullets (Items 2 and 4) were discharged from the same firearm as the known test-fired bullets (Item 1). The questioned recovered bullets (Items 3 and 5) were not discharged from the same firearm as the known test-fired bullets (Item 1).
69G3FA	The Items 2 and 4 fired bullets were fired from the same firearm that fired the Items 1.1, 1.2, and 1.3 test fired bullets, indicated by the submitting agency as being a Tanfoglio model Witness. These identifications are based on sufficient agreement of the combination of individual characteristics and all discernible class characteristics. The Items 3 and 5 fired bullets were not fired from the same firearm that fired the Items 1.1, 1.2, and 1.3 test fired bullets. These eliminations are based on differences in class characteristics (different number of land and groove impressions). The Items 3 and 5 fired bullets were fired from the same unknown firearm. This identification is based on sufficient agreement of the combination of individual characteristics and all discernible class characteristics. Item 3 is a 38 caliber family fired bullet having eight conventional land and groove impressions with a right hand twist. An Association of Firearm and Tool Mark Examiners (AFTE) General Rifling Characteristics Database search of possible firearms that could have fired Item 3 is attached. Since Items 3 and 5 were identified as being fired from the same unknown firearm, only Item 3 was used for the GRC Search. Note: The attached GRC search may not be all-inclusive; any recovered firearms of the appropriate caliber class may be submitted to the laboratory for comparison purposes.
6AAWBT	Items 2 and 4 were fired in the same firearm as Item 1 (identification). This is also the opinion of Firearms Examiner NAME. Items 3 and 5 were not fired in the same firearm as Item 1 (elimination). This is also the opinion of Firearms Examiner NAME. Items 3 and 5 could not be identified or eliminated as having been fired in the same firearm (inconclusive). This is also the opinion of Firearms Examiner NAME. Items 3 and 5 are consistent with the 38 caliber family, which includes 9mm Luger.
6APFVP	The fired bullets in Submissions #1b (item 2) and #1d (item 4) were microscopically compared and identified as having been fired from the firearm that fired the test fires in Submission #1a (item 1) based on sufficient agreement in individual characteristics present to conclude an identification. The fired bullets in Submissions #1c (item 3) and #1e (item 5) 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. The fired bullets in Submissions #1c (item 3) and #1e (item 5) were eliminated as having been fired from the firearm that fired the test fires in Submission #1a based on different class characteristics present.
6BQ7AK	Item 001.B: (Item 2) Fired FMJ bullet in sealed white box Laboratory Items 001.B and 001.D (Items 2 and 4) two fired FMJ bullets are identified as being fired by the suspect firearm used to fire Laboratory Item 001.A (item 1) three test fires from suspect's firearm. Item 001.C: (Item 3) Fired FMJ bullet in sealed white box Laboratory Items 001.C and 001.E (Items 3 and 5) two fired FMJ bullets are identified as being fired by the same firearm. Laboratory Items 001.C and 001.E (Items 3 and 5) two fired FMJ bullets are eliminated as being fired by the suspect firearm used to fire Laboratory Item 001.A (item 1) three test fires from suspect's firearm. A list of possible firearms that could have fired Laboratory Items 001.C and 001.E (Items 3 and 5) two fired FMJ bullets was generated: Cartridge Manufacturer Model 38 S&W RG INDUSTRIES RG40 38 SPECIAL CHARTER ARMS Unknown 38 SPECIAL CHARTER ARMS UNDERCOVER

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TABLE 2

WebCode	Conclusions
	380 AUTO / 9mm KURZ HI-POINT FIREARMS CF 9mm LUGER (9x19mm) HI-POINT FIREARMS 995 9mm LUGER (9x19mm) HI-POINT FIREARMS 995 9mm LUGER (9x19mm) HI-POINT FIREARMS C NOTE: This list is not intended as an all-inclusive list of all possible firearms that could have fired the item(s). It is intended as an investigative tool for law enforcement use only.
6E297N	[No Conclusions Reported.]
6EL2QY	B1 & B4 were microscopically compared to each other and were identified as having been fired from the same firearm. This firearm has not been submitted. B1 & B4 are eliminated as having been fired from firearm, P1 due to differences in individual characteristics. B2 & B3 were microscopically compared to each other and Pistol, P1, and were identified as having been fired from P1.
6G8NJL	Items 2-5 were weighed, measured, and examined for design characteristics, finding them to possess features of 9mm Luger caliber bullets. Items 2 and 4 were microscopically compared with the Item 1 test fired specimens, finding correspondence of class characteristics and individual distinguishing characteristics. It was concluded that Items 2 and 4 were fired by the Item 1 source firearm. Items 3 and 5 were compared with the Item 1 test fired specimens, finding class characteristic differences (6R vs. 8R rifling). It was concluded that Items 3 and 5 were not fired by the Item 1 source firearm. Items 3 and 5 were microscopically intercompared, finding class and individual distinguishing characteristic correspondence. It was concluded that Items 3 and 5 were fired by the same firearm (firearm not submitted).
6GC7J7	ITEM 2 AND ITEM 4 WERE DISCHARGED FROM THE SUSPECT`S PISTOL ITEM 1 ITEM 3 AND ITEM 5 WERE DISCHARGED FROM A SAME PISTOL, DIFFERENT FROM SUSPECT'S FIREAM.
6JYK9F	The bullets Items 1, 2, and 4 were Identified as having been fired from a single firearm. The bullets Items 3 and 5 were Identified as having been from a single firearm. They display general rifling characteristics similar to firearms by Hi-Point; however, any suspect firearm should be submitted to this laboratory. Items 3 and 5 were Eliminated with respect to having been fired from the same firearm as the bullets Items 1, 2, and 4.
6N9V83	1. Examination of Exhibit 1 revealed three fired 9mm Luger bullets designated as test standards from a suspect weapon. 2. Examination of Exhibits 2, 3, 4, and 5 revealed each contains one fired .38 caliber class bullet normally loaded in a 9mm Luger cartridge, all of which are suitable for comparison. a. Microscopic comparison revealed Exhibits 2 and 4 were fired from the same firearm as Exhibit 1 due to sufficient agreement of individual characteristics. b. Microscopic comparison revealed Exhibits 3 and 5 were fired from the same firearm due to sufficient agreement of individual characteristics; however, they were not fired from the same firearm as Exhibit 1 due to disagreement of class characteristics. i. Exhibits 3 and 5 were fired from a firearm displaying eight lands and grooves with a right hand twist. ii. Possible firearms that could have fired Exhibits 3 and 5 include firearms manufactured by Hi-Point, Charter Arms, and RG Industries. This list is not all inclusive; any suspect firearms should be submitted for microscopic comparison.
6RBWAK	Item 2 and Item 4: Microscopic comparison of these bullets to a test-fired bullet from the Tanfoglio pistol, Item 1, revealed that they have the same class of rifling and sufficient corresponding individual marks to conclude that these bullets, Item 2 and Item 4, were fired in the Tanfoglio pistol, Item 1. Items 3 and Item 5 – Unknown Firearm #1: Microscopic comparison of these bullets revealed that they have the same class of rifling and sufficient corresponding individual marks to conclude that Item 3 and Item 5 were fired in the same unknown firearm. Stereoscopic comparison of these bullets to a test-fired bullet from the

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TABLE 2

WebCode	Conclusions
	Tanfoglio pistol, Item 1, revealed significant differences in the class of rifling marks. These bullets, Item 3 and Item 5, were eliminated as having been fired in Tanfoglio pistol, Item 1.
6WXXZW	Items 2 and 4 were fired in the suspect's Tanfoglio pistol. Item 3 was fired in a second firearm. Item 5 was fired in the same firearm as Item 3, or a similar firearm made on the same tooling in the same approximate state of wear. The AFTE General Rifling Characteristics Database, version 1.0-07242024, lists only High-Point firearms as having rifling consistent with Items 3 and 5. The database is not all-inclusive. Any suspect firearm with similar rifling should be submitted to the laboratory for examination.
6XZJVD	Items 2 and 4 were fired in the same firearm as the item 1 test fires. Items 3 and 5 were fired in a second firearm. Items 3 and 5 are consistent with bullets from ammunition designated 9mm Luger. A list of makes of firearms that may have fired these items includes, but is not limited to: Hi-Point Firearms.
73KXZA	Items 2 and 4 were fired in the same firearm as the item 1 test fires. Items 3 and 5 were fired in a second firearm. Items 3 and 5 are consistent with bullets from ammunition designated 9mm Luger. A list of makes of firearms that may have fired these items includes, but is not limited to: Hi-Point Firearms.
76UTXV	The fired jacketed bullets in items 001-02, 001-03, 001-04, and 001-05 were microscopically compared to the test fired bullets in item 001-01 (recovered from Tanfoglio Witness) with the following results: Items 001-02 and 001-04 were identified as having been fired through the same barrel as the item 001-01 test fired bullets. Items 001-03 and 001-05 were identified as having been fired through the barrel of the same unknown firearm. Items 001-03 and 001-05 were eliminated as having been fired through the same barrel as the item 001-01 test fired bullets.
7BGK6N	Items #1 consists of three (3) 9mm Luger caliber copper-jacketed bullets which were listed as having been fired from the same known Tanfoglio, Witness model firearm rifled with six lands and grooves with a right twist. Items #2 and #4 are two (2) 9mm Luger caliber copper-jacketed bullets which were identified as having been fired from the same firearm as the Item #1 copper-jacketed bullets. Items #3 and #5 are two (2) 9mm Luger caliber copper-jacketed bullets which were fired from the same firearm, rifled with eight lands and grooves, with a right twist. Due to differences in class characteristics, the Items #3 and #5 were not fired in the same firearm as the Items #1, #2 and #4 bullets. Therefore, two firearms were used in this incident.
7FXWDQ	SUBMISSION 002 and 004: The projectiles were identified to the submission 001 pistol. SUBMISSION 003 and 005: The projectiles were compared to each other and fired from an unsubmitted firearm. These projectiles could have been fired from a pistol manufactured by Hi-Point. Other possibilities may also exist.
7G4NWR	Items 2 and 4 were identified microscopically as having been fired from the same firearm that fired the test fires, Item 1, based on agreement of the combination of individual characteristics and all discernible class characteristics. Items 3 and 5 were microscopically eliminated as having been fired from the same firearm that fired the test fires, Item 1, due to disagreement of discernible class characteristics. Items 3 and 5 were identified microscopically as having been fired from the same unknown firearm based on agreement of the combination of individual characteristics and all discernible class characteristics. Visual and microscopic examination of Items 3 and 5 revealed them to be 38 / 9mm caliber-class bullets fired from a firearm with a rifling pattern of eight (8) lands and grooves with a right twist. The size, weight and style of Items 3 and 5 are most consistent with bullets typically found loaded in 9mm Luger cartridges. Among the more common firearms that could have possibly fired Items 3 and 5 include, but

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TABLE 2

WebCode	Conclusions
	are not limited to, the following: Hi-Point Firearms and Lorcin brands of 9mm Luger semi-automatic pistols; and a Hi-Point Firearms brand of 9mm Luger semi-automatic rifle or carbine. The list of possible firearms was generated using an in-house expanded version of the General Rifling Characteristics (GRC) Database created by the Federal Bureau of Investigation. This is not meant to be an all-inclusive list but rather an investigative aide; and any suspect firearm(s) of the appropriate caliber-class should be submitted for comparison; however, a complete list of the search results will be maintained in the case file. Current Integrated Ballistics Identification System (IBIS) / BrassTRAX technology in this laboratory is not capable of bullet imaging; therefore, no entries were made. Test fires are being retained by the Firearms Identification Laboratory; all other items of evidence are being returned.
7H4EBM	Exhibits 2 and 4 (questioned recovered projectiles) were identified as having been fired in the same 9mm firearm as exhibit 1 (test fired projectiles). Exhibits 3 and 5 (questioned recovered projectiles) were identified as having been fired in a second 9mm firearm. Suspect weapons include 9mm Hi-Point firearms; however, any suspect weapon should be submitted to the laboratory for analysis.
7K6PYA	Items 2 and 4 were fired in the same firearm as the item 1 test fires. Items 3 and 5 were fired in a second firearm. Items 3 and 5 are consistent with bullets from ammunition designated 9mm Luger. A list of makes of firearms that may have fired these items includes, but is not limited to: Hi-Point.
7LXM6V	The questioned 9mm caliber bullet from submitted envelope labeled Item 2, was determined to be fired from the suspect's Tanfoglio brand, Witness firearm. The questioned 9mm caliber bullet from submitted envelope labeled Item 3, was excluded as having been from the suspect's Tanfoglio brand, Witness firearm. The questioned 9mm caliber bullet from submitted envelope labeled Item 4, was determined to be fired from the suspect's Tanfoglio brand, Witness firearm. The questioned 9mm caliber bullet from submitted envelope labeled Item 5, was excluded as having been fired from the suspect's Tanfoglio brand, Witness firearm.
7MUNLK	The Item 1, Item 2, and Item 4 bullets were microscopically compared to one another with POSITIVE RESULTS. Based on the sufficient agreement of individual characteristics, the five bullets were fired through the same firearm barrel. The Item 3 and Item 5 bullets were microscopically compared to one another with POSITIVE RESULTS. Based on the sufficient agreement of individual characteristics, the two bullets were fired through the same firearm barrel. Based on differences in class characteristics, the Item 3 and Item 5 bullets were ELIMINATED as having been fired through the same firearm barrel as the Item 1, Item 2, and Item 4 bullets.
7NMLQ7	Items 2 & 4 were Inconclusive (+) to each other and to the Item 1 test fires. Items 3 & 5 were Eliminated to the Item 1 test fires and Items 2 & 4 based on a difference in class characteristics. Items 3 & 5 were Inconclusive (+) to each other. Items 3 & 5 have design features consistent with bullets loaded in 38 caliber class (38/357/9mm) ammunition and display rifling characteristics similar to firearms by Hi-Point, RG Industries, and Charter Arms. 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

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TABLE 2

WebCode	Conclusions
	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.
7PERYJ	From the analysis, study and based on the microscopic comparison of the bullets, it is concluded: That there are 2 groups of bullets: Group 1. The 2 bullets identified with numbers 2 and 4 correspond to bullets of the caliber 9MM, which are IDENTIFIED as fired from the same firearm as the known test-fired bullets (Item 1) Group 2. The 2 bullets identified with the numbers 3 and 5 correspond to bullets of the caliber 9MM, which are IDENTIFIED as being fired by the same firearm.
7PGLHP	1. Items 2 and 4 were fired by the Tanfoglio firearm and are 9mm Luger. 2. Items 3 and 5 present the same class characteristics, however, but there is not enough consecutiveness. Due to laboratory policies, elimination is not given based on individual characteristics, the result is "inconclusive."
7QU2ZX	The Item 2 and 4 bullets are identified as having been fired in the same firearm as the Item 1 bullets. The Item 3 and 5 bullets are eliminated as having been fired in the same firearm as the Item 1 bullets. The Item 3 and 5 bullets are identified as having both been fired in the same unknown firearm.
7RNUVG	The fired bullets were physically examined then microscopically compared using light comparison microscopy. Items 2 and 4 (fired bullets) are identified as having been fired from the same firearm as Items 1A, 1B and 1C (fired bullets). Items 3 and 5 (fired bullets) are inconclusive as having been fired from the same firearm. These items share agreement of class characteristics but lack consistent and reproducible individual characteristics. Items 3 and 5 (fired bullets) are eliminated as having been fired in the same firearm as Items 1A, 1B, 1C, 2 and 4 (fired bullets). There are differences in the class characteristics (number of land and grooves). Items 1A, 1B, 1C, 2 and 4 are consistent with being .38/9mm caliber class fired bullets displaying conventional rifling specifications of six lands and grooves with a right twist. Items 3 and 5 are consistent with being .38/9mm caliber class fired bullets displaying conventional rifling specifications of eight lands and grooves with a right twist.
7T2JYT	The projectiles from Items 2 and 4 were compared macroscopically and microscopically to the test fired projectiles from Item 1. Based on the agreement of individual characteristics and all discernible class characteristics, it was determined that the projectiles from Items 2 and 4 were fired in Item 1. (Identification) Due to differences in class characteristics, Items 3 and 5 were eliminated as having been fired from the same firearm as Item 1. (Elimination) The projectiles from Items 3 and 5 were compared macroscopically and microscopically to each other. Based on the agreement of individual characteristics and all discernible class characteristics, it was determined that the projectiles from Items 3 and 5 were fired same firearm. (Identification)
7V8M8J	Item 1 - "Three known test-fired bullets discharged from the suspect's firearm" (1). Item 2 - One (1) fired 9mm Luger caliber bullet (2). Item 3 - One (1) fired bullet, consistent with 9mm Luger caliber (3). Item 4 - One (1) fired 9mm Luger caliber bullet (4). Item 5 - One (1) fired bullet, consistent with 9mm Luger caliber (5). Examinations Performed: Items 2-5 and Item 1 known bullets were microscopically examined. Items 2, 4, and Item 1 known bullets were microscopically compared. Items 3 and 5 were microscopically compared. Results: Item 2 and Item 4 exhibit six (6) land and groove impressions with a right twist. Items 2, 4, and Item 1 known bullets exhibit similar class characteristics. Items 2, 4, and Item 1 known bullets exhibit patterns and markings that are consistent with each other. Item 3 and Item 5 exhibit eight (8)

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TABLE 2

WebCode	Conclusions
	land and groove impressions with a right twist. Item 3 and Item 5 exhibit similar class characteristics. Item 3 and Item 5 exhibit patterns and markings that are consistent with each other. Items 3 and 5 exhibit patterns and markings that are inconsistent with Items 2, 4, and Item 1 known bullets. Conclusions: Items 2, 4, and Item 1 known bullets exhibit similar class characteristics. As a result of microscopic comparison, it was concluded that Item 2 and Item 4 are identified as having been fired from the same firearm that fired Item 1 known bullets. Item 3 and Item 5 exhibit similar class characteristics. As a result of microscopic comparison, it was concluded that Item 3 and Item 5 are identified as having been fired from the same unknown firearm. Item 3 and Item 5 are eliminated as having been fired from the same firearm that fired Items 2, 4, and Item 1 known bullets due to significant disagreement of discernible class characteristics. Firearms that produce similar rifling characteristics as those exhibited on Item 3 and Item 5 include, but are not limited to 9mm Luger caliber firearms manufactured by Hi-Point Firearms.
7ZEFVM	Two bullets (Items 2 and 4) were examined and microscopically compared to the test-fired bullets. The class characteristics were similar; based on sufficient agreement of individual characteristics in the striae on the land impressions, the two bullets were both identified as having been fired from the Tanfoglio Witness firearm. The other two bullets (Items 3 and 5) were examined and microscopically compared to the test-fired bullets. The class characteristics were different; based on the sufficient disagreement between the groove widths and number of lands and grooves, these other two bullets were excluded as having been fired from the Tanfolgio Witness firearm.
87ZTDM	Item 2 and Item 4 were discharged from the same firearm as the known test-fired bullets. Item 3 and Item 5 were not discharged from the same firearm as the known test-fired bullets.
89QV3M	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 bullets, item refs:2 and 4 were fired from the recovered firearm, item ref: 1.
89RN3F	Items 1A1, 1A2, 1A3, 1B, 1C, 1D, and 1E (fired bullets) were physically examined then microscopically compared using light comparison microscopy. Items 1A1, 1A2, 1A3, 1B, and 1D (fired bullets) are identified as having been fired from the same firearm. Items 1C and 1E (fired bullets) are eliminated as having been fired from the same firearm as Items 1A1, 1A2, 1A3, 1B, and 1D (fired bullets). There are differences in class characteristics (number of lands and grooves). Items 1C and 1E (fired bullets) are inconclusive as having been fired from the same firearm. These items share agreement of class characteristics but lack consistent and reproducible individual characteristics. Items 1C and 1E (fired bullets) are consistent with being a .38/9mm caliber class fired metal jacketed bullet displaying conventional rifling specifications of eight lands and grooves with a right twist.
8A2QQZ	Visual and microscopic analyses of evidence bullets Q1 through Q4 (Items 2 through 5) and test fired bullets from K1 Tanfoglio pistol (Item 1) were initiated on 8/22/2024 and the results of the comparisons and evaluations are as follow: Based on agreement of discernible class characteristics and sufficient agreement of individual characteristics Q1 and Q3 (Items 2 and 4) can be identified as having been fired with K1 Tanfoglio firearm (Item 1). Q2 and Q4 (Items 3 and 5) can be excluded as having been fired with K1 Tanfoglio firearm (Item 1) due to differences in general rifling class characteristics present (06R vs 08R). Due to the potential for subclass characteristics present on Q2 and Q4 (Items 3 and 5) they cannot be identified or excluded as having been fired with the same unknown firearm. Q2 and Q4 bear similar rifling class characteristics and the recovery of a firearm is necessary for further analysis of the potential subclass characteristics.

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TABLE 2

WebCode	Conclusions
8C792P	The questioned recovered bullets from Item 2 and 4 were discharged from the same firearm as the known test-fired bullets (Item 1) However we can see that the bullets from Item 3 and Item 5 wears similar characteristics. They were discharged from the same firearm but another than the seized pistol.
8CP6EA	The fired bullets in Items 2 and 4 display class characteristics consistent with 9mm Luger caliber, with six conventional lands and grooves, and a right twist. The fired bullets in Items 2 and 4 were fired in the same firearm as Item 1, based on agreement observed in individual characteristics. The fired bullets in Items 3 and 5 display class characteristics consistent with 9mm Luger caliber, with eight conventional lands and grooves, and a right twist. The fired bullets in Items 3 and 5 were not fired in the same firearm as Item 1, based on disagreement observed in class characteristics.
8D23LZ	Microscopic comparison examinations were conducted between QB-1, QB-2, QB-3, QB-4 and test fired bullets from K-1 (Tanfoglio Witness), resulting in the conclusions: QB-1 (item 2) and QB-3 (item 4) were fired from K-1 (Tanfoglio Witness). QB-2 (item 3) and QB-4 (item 5) were fired from a second firearm, firearm unknown. Identifications were based on an agreement of all discernable class characteristics and sufficient agreement of individual characteristics. QB-2 (item 3) and QB-4 (item 5) were not fired from K-1 based on a difference in class characteristics. The rifling characteristics observed on QB-2 (item 3) and QB-4 (item 5) are commonly associated with firearms marketed under the brand names of RG Industries, Charter Arms, and Hi-Point Firearms.
8HEMTL	Items 2 and 4 were discharged from the same firearm as Item 1. Items 3 and 5 were not discharged from the same firearm as Item 1.
8K3CWY	1. Examination of Exhibit 1 revealed three fired 9mm Luger bullets reported by submitter to have come from suspect's firearm. Exhibit 1 is suitable for microscopic comparison. 2. Examination of Exhibits 2, 3, 4, and 5 revealed each consisted of one fired 9mm Luger bullet. Exhibits 2, 3, 4, and 5 are suitable for microscopic comparison. 3. Microscopic comparison revealed Exhibits 2 and 4 were fired from the same firearm as Exhibit 1 due to sufficient agreement of individual characteristics. 4. Microscopic comparison revealed Exhibits 3 and 5 were not fired from the same firearms as Exhibit 1 due to disagreement of class characteristics. 5. Microscopic comparison revealed it could not be determined if Exhibits 3 and 5 were fired from the same firearm due to insufficient agreement of individual characteristics.
8LCDQK	[No Conclusions Reported.]
8MBANV	Following a detailed examination of rifling marks (both family and individual characteristics) I am satisfied that both Item 2 and Item 4 had been discharged from the suspect Tanfoglio pistol used to generate the test bullets in Item 1. I am also satisfied that Item 3 and Item 5 had not been discharged from the suspect Tanfoglio pistol, but that they had been discharged from the same barrel as each other. A second gun was therefore involved in this incident.
8PFYPH	a. The spent projectiles mentioned in Item 1-2 and Item 1-4 above were fired from the suspect weapon which was the source weapon for the Item 1-1 test firings. (Identification) b. The spent projectiles mentioned in Item 1-3 and Item 1-5 above were fired from the same unknown weapon capable of chambering and firing .38 caliber class ammunition. (Identification) c. The spent projectiles mentioned in Item 1-3 and Item 1-5 above were not fired from the suspect weapon which was the source weapon for the Item 1-1 test firings. (Exclusion)
8PHKKY	A microscopic examination between the fired bullets "2" and "4" and the test fired bullets "1" displayed sufficient agreement to identify them as having been discharged from the same firearm. A microscopic examination between the fired bullets "3" and "5" displayed sufficient

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TABLE 2

WebCode	Conclusions
	agreement to identify them as having been discharged from a second firearm. Due to differences in class characteristics these were eliminated as having been discharged from the firearm that discharged the test fired bullets.
8Q86YG	Items 2 and 4 were fired from the same firearm as Item 1. Items 3 and 5 were fired in the same firearm as each other; however, they were not fired in the same firearm as Item 1.
8RN6BJ	The test fired bullets (Item 1) were compared to the fired bullets listed as Items 2, 3, 4 & 5. It was determined that Items 2 & 4 were fired from the same firearm that produced the test fired bullets. It was further determined that Items 3 & 5 could not have been fired from the same firearm that produced the test fires due to differences in general rifling characteristics.
8Y6QCB	After a microscopic examination, Item 2 and Item 4 were identified as having been fired in the suspect's Tanfoglio Witness firearm based on a sufficient agreement of individual characteristics in the rifling marks. Item 3 and Item 5 were eliminated as having been fired in the suspect's Tanfoglio Witness pistol due to a difference of class characteristics in the rifling.
8YJCMX	The below listed spent bullets were macroscopically and microscopically examined and compared with test fires (Lab Evidence# 001-A1) from the Tanfoglio Witness. It is my opinion that the below listed items were fired from this firearm (identification). Property# Lab Evidence# Item# Description 24-5261 001-A2 2 Spent 38 caliber bullet 24-5261 001-A4 4 Spent 38 caliber bullet The below listed spent bullets were macroscopically and microscopically examined and compared with test fires (Lab Evidence# 001-A1) from the Tanfoglio Witness. It is my opinion that the below listed items were not fired from this firearm (elimination). The below listed spent bullets were further compared with each other. It is my opinion that the below listed items were fired from the same unknown firearm (identification). Property# Lab Evidence# Item# Description 24-5261 001-A3 3 Spent 38 caliber bullet 24-5261 001-A5 5 Spent 38 caliber bullet. [Participant created a manually formatted table within the free form text space. This special formatting was not transferable into the final report. Data is presented as is.]
8ZXNGW	Items 2 and 4 were identified as having been fired through the same barrel as Item 1. Items 3 and 5 were eliminated as having been fired through the same barrel as Item 1. The comparison of Items 3 and 5 was inconclusive.
92M872	Bullet evidence Q1 and Q3 were identified as having been fired with the K1 firearm. Bullet evidence Q2 and Q4 were excluded as having been fired with K1 based on disagreement of GRC. It was not possible to identify or exclude bullet evidence Q2 as having been fired with the same unknown firearm(s) as bullet evidence Q4 based on insufficient agreement.
94BPZL	The expended bullets submitted in laboratory evidence items 1.2-1.5 were microscopically compared to the bullets submitted in laboratory evidence item 1.1, (said to be test fires from a Tanfoglio Witness) with the following results. Laboratory evidence items 1.2 and 1.4 were all identified as having been fired from the same firearm as the bullets submitted in laboratory item 1.1. Laboratory evidence items 1.3 and 1.5 were eliminated as having been fired from the same firearm as the bullets submitted in laboratory item 1.1, due to differences in rifling profiles. Laboratory items 1.3 and 1.5 were microscopically compared to each other with the following results. Laboratory items 1.3 and 1.5 could have been fired from the same firearm. They have the same general rifling characteristics however they failed to retain sufficient individual characteristics for a positive identification or elimination.
98A32D	Items 2 and 4 present concordance of characteristics with consecutive and continuous lines in relation to item 1, which is why it is determined as a result of identification.
9KHXZA	After a microscopic examination, Items 2 and 4 were identified as having been fired in the

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TABLE 2

WebCode	Conclusions
	suspect's Tanfoglio Witness firearm, based on a sufficient agreement of individual characteristics in the rifling marks. Items 3 and 5 were eliminated as having been fired from suspect's Tanfolglio Witness pistol due to a difference of class characteristics in the rifling.
9RJ8FE	Bullet Analysis: Methodology: Physical (Visual Examination), Electronic Balance/Digital Caliper/Digital Micrometer, Microscopy (Comparison Microscope). Items 2, 3, 4, and 5 are a 38 caliber class bullets based upon the diameter. Items 2 and 4, the bullets, were fired through the barrel of the same firearm as Items 1A, 1B, and 1C, the test fires, based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the bullets, were not fired through the barrel of the same firearm as Items 1A, 1B, and 1C, the test fires, based upon different class characteristics. Opinion/Interpretation: Items 2, 3, 4, and 5 are consistent with bullets loaded in 9mm Luger caliber cartridges based upon the weight and style. Items 3 and 5, the bullets, exhibit characteristics found in (but not limited to) the following firearms: High-Point Firearms 9mm Luger caliber firearms.
9T9H4L	Items 2 and 4 were identified as having been fired from the Item 1 pistol due to agreement of class characteristics and sufficient agreement of individual characteristics. Items 3 and 5 were not fired from the Item 1 pistol due to a significant disagreement of class characteristics. Items 3 and 5 could not be identified or eliminated as having been fired from the same unknown firearm due to agreement of all discernible class characteristics and insufficient agreement or disagreement of individual characteristics.
9TCZBX	The questioned recovered bullets (Items 2 and 4) were discharged from the same firearm as the known test-fired bullets (Item 1). The questioned recovered bullets (Items 3 and 5) were not discharged from the same firearm as the known test-fired bullets (Item 1). For the two bullets (Item 3 and Item 5), it cannot be determined whether they were fired from one or two firearms (Inconclusive C). The two bullets (Item 3 and 5) are consistent with 9mm Luger and were fired from a firearm with eight conventionaly rifled land and grooves with a right twist. Posible firearms from which the two bullets (Item 3 and Item 5) may have been fired include, but are not limited to, 9mm Luger class firearms „HI-POINT FIREARMS" Model 995 (RC and RI) - (AFTE GRC).
9UZNEK	Item #1 consists of three (3) 9mm Luger caliber copper jacketed bullets with six land and groove rifling impressions with a right twist which were test fired from a Tanfoglio Witness firearm. Items #2 and #4, two (2) 9mm Luger caliber copper jacketed bullets, were identified as having been fired from the same firearm as Item #1 copper jacketed bullets. Items #3 and #5 are two (2) 9mm Luger caliber copper jacketed bullets with eight land and groove rifling impressions with a right twist. Due to differences in class characteristics, Items #3 and #5 were eliminated as having been fired in the same firearm as Items #1, #2, and #4. Items #3 and #5 share common class characteristics but could not be identified or excluded as having been fired from the same firearm.
9YW72D	Bullet B-1 & B-3 was microscopically compared to (Known)firearm and an identification was made. Bullet B-1 & B-3 was fired from (Known)firearm. Bullet B-1 & B-3 was eliminated as having been fired from (Known)firearm due to differences in class characteristics. Bullet B-1 & B-3 was microscopically compared to each other with inconclusive results. A microscopic comparison was performed, however, there is insufficient detail of class and/or individual characteristics for an identification or elimination finding.
A2KRFL	Items 1A, 1B, 1C, 2 and 4 are 9mm / 38 caliber class bullets fired in a firearm having six lands and grooves with a right twist. Items 1A, 1B, 1C, 2 and 4 were identified as having been

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TABLE 2

WebCode	Conclusions
	fired in the same firearm based on agreement in class and individual characteristics. Items 3 and 5 are 9mm / 38 caliber class bullets fired in a firearm having eight lands and grooves with a right twist. Items 3 and 5 were identified as having been fired in the same firearm based on agreement in class and individual characteristics. Items 3 and 5 were excluded as having been fired in the same firearm as Items 1A, 1B, 1C, 2 and 4 based on differences in class characteristics.
A3WWKX	The forensic material consists of in total 7 bullets (9 mm) with the following description: item 1: Three bullets fired using the suspect's handgun (known). item 2-5: Four bullets recovered from the police or medical examiner (questioned). When comparing the test fired bullets item 1 with the bullets item 2-5, it was determined that due to matches in the individual trace areas, the questioned bullets item 2 and 4 were fired from the seized pistol Tanfoglio. The bullets item 3 and 5 don't match the individual striations with the test firings item 1. Consequently, they were not fired in the seized Tanfoglio weapon. The bullets item 3 and 5 show similarities in the individual trace areas. They were therefore most likely fired in one firearm, but not from the seized Tanfoglio weapon.
ACGZUH	Deformed bullets (2, 4) are IDENTIFIED as having been fired from the SAME gun as Known test fired bullets (A1 - A3) based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3, 5) are IDENTIFIED as having been fired from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3, 5) are ELIMINATED as having been fired from the same gun as Known test fired bullets (A1 - A3) and Deformed bullets (2,4) based on the observed disagreement of class characteristics.
AE79ZD	Items 1B and 1D (Agency items 2 and 4) are identified as having been fired from the same firearm as items 1A1, 1A2, and 1A3 (Agency item 1). Items 1C and 1E (Agency items 3 and 5) are eliminated as having been fired from the same firearm as items 1A1, 1A2, and 1A3 (Agency item 1) due to different class characteristics (rifling specifications; 8R vs. 6R). Items 1C and 1E (Agency items 3 and 5) are inconclusive as having been fired from the same firearm. These items lack consistent and reproducible individual characteristics and have possible subclass characteristics observed in one land impression. Items 1C and 1E are consistent with being .38 class caliber metal jacketed fired bullets displaying conventional rifling specifications of 8 lands/grooves with a right twist. Physical characteristics and rifling specifications of these items are most consistent with .357 Magnum, .38 Special and 9mm Luger caliber firearms produced by numerous manufacturers. No suspect firearm should be overlooked.
AEN8BP	Items #2 through #4 were microscopically compared to the test fired bullets with the following results: Test fired bullets (#1) were microscopically compared to Items #2 and #4 and found to have sufficient agreement in class characteristics (general rifling characteristics) and individual characteristics (striated marks in multiple land impressed areas). The test fired bullets (#1) and the two discharged bullets (#2 & #4) were identified as having been discharged in the same firearm . Test fired bullets (#1) were microscopically compared to Items #3 and #5 and found to not have agreement in class characteristics (different number of lands and grooves). The test fired bullets (#1) and Items #3 and #5 were eliminated as having been discharged in the same firearm. Items #3 and #5 were microscopically compared with inconclusive results. Agreement was noted in class characteristics (general rifling characteristics) but insufficient agreement was observed in individual characteristics for identification.
AEPBQL	Exhibits 2 and 4 (questioned recovered projectiles) were identified as having been fired in the same 9mm firearm as exhibit 1 (test-fired projectiles). Exhibits 3 and 5 (questioned recovered projectiles) were identified as having been fired in a second 9mm firearm. Suspect weapons include Hi-Point firearms; however, any suspect weapon should be submitted to the laboratory

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TABLE 2

WebCode	Conclusions
	for analysis.
AFFEFL	The three test fired bullets (Item 1) and the four individually packaged recovered bullets (Items 2, 3, 4, 5) were microscopically intercompared to one another with the following results: The bullets in Items 2 and 4 were fired from the same firearm that produced the test fired bullets in Item 1 based on agreement in all discernable class characteristics and agreement of individual characteristics. The bullets in Items 3 and 5 were not fired by the same firearm that produced the test fired bullets in Item 1 based on distinct differences in the general rifling characteristics. A further inter-comparison of Items 3 and 5 was inconclusive but suggested that they were likely fired from the same unknown firearm. Due to the nature of the markings, an evaluation of the unknown firearm barrel is required before a conclusive determination about a shared firing source can be made. These bullets are consistent by size and design with nominal caliber 9mm/38 bullets bearing eight land and groove impressions with a right-hand twist. Manufacturers of firearms that employ the same caliber and rifling characteristics observed on Items 3 and 5 include but are not limited to: Hi-Point Firearms. This list is not intended to be all inclusive and any firearm with suspected involvement in this case should be submitted to the laboratory for comparison.
AHQ2CF	The Exhibit 1, 2, and 4 bullets were identified as having been fired in the same firearm. The Exhibit 3 and 5 bullets were identified as having been fired in the same firearm. Firearms that produce general rifling characteristics similar to those observed on Exhibits 3 and 5 include, but may not be limited to, 9mm Luger caliber pistols and rifles and 380 Auto caliber pistols marketed by Hi-Point Firearms, and 38 Special caliber revolvers marketed by Charter Arms. The Exhibit 1, 2, and 4 bullets were excluded as having been fired in the same firearm as the bullets Exhibits 3 and 5.
AL9J9Q	1. The bullets marked E-1 to E-3 ("Item" 1), E-4 ("Item" 2) and E-5 ("Item" 4), corresponding to piece 1, are caliber 9mm, with rifling to the right (R-6) and were fired by the same firearm (Identification). 2. The bullets marked E-6 ("Item" 3) and E-7 ("Item" 5), corresponding to piece 1, are 9mm caliber, with rifling to the right (R-8) and were fired for the same firearm (Identification).
AMHJCC	Item 2 and Item 4 show the same class characteristics as Items shot with the questioned firearms. Examination at higher magnification allowed to highlight several similarities between Item 2, Item 4 and test fires (land impressions and groove impressions). Item 3 and item 5 have different class characteristics as Items shot with the questionedfirearm. They can thus be excluded. Item 3 and 5 share the same class characteristics.
ANVXXZ	The Item 2 and 4 bullets were Identified to the Item 1 test-fired bullets. The Item 3 and 5 bullets were Eliminated to the Item 1 test-fired bullets, the Item 2 and 4 bullets. The Item 3 and 5 bullets were Identified to each other.
ARD6DM	Examined the two specimens marked #2 and #4. They weigh 124.5 and 124.4 grains respectively and each indicates six lands and six grooves with a right hand twist. They are 38 caliber class discharged full metal jacketed bullets. Examined the two specimens marked #3 and #5. They weigh 124.2 and 123.9 grains respectively and each indicates eight lands and eight grooves with a right hand twist. They are 38 caliber class discharged full metal jacketed bullets. Compared test bullets from the (Item #1) 9mm Luger caliber Tanfoglio semiautomatic pistol serial number XXXXX against the two bullets marked #2 and #4 with positive results. The two bullets marked #2 and #4 were identified as having been discharged from the submitted pistol. The two bullets marked #3 and #5 were eliminated as having been discharged from the (Item #1) pistol based on a difference in class characteristics.
AT69VM	1. Exhibits 1.2 and 1.4 were fired from the same firearm that fired Exhibit 1.1 based on

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TABLE 2

WebCode	Conclusions
	sufficient agreement of individual characteristics. 2. Exhibits 1.3 and 1.5 were fired from the same unknown 9mm Luger caliber firearm based on sufficient agreement of individual characteristics. 3. Exhibits 1.3 and 1.5 were not fired from the same firearm that fired Exhibit 1.1 based on differences in class characteristics.
AUJKUR	1. The bullet projectiles marked E-1 to E-3 (Item 1), E-4 (Item 2) and E-6 (Item 4), corresponding to Piece 1, are caliber 9mm with rifling to the right (R-6) and were fired by the same firearm (Identification). 2. The bullet projectiles marked E-5 (Item 3) and E-7 (Item 5), corresponding to item 1, are caliber 9mm with rifling to the right (R-8) and were fired by the same firearm (Identification).
AW6KRL	Comparison microscope examinations were conducted on the evidence listed above. The findings of this examiner are the following: 1- Exhibits 1.2 and 1.4 were fired by Exhibit 1.1 (9mm caliber Tanfoglio model witness firearm) based on sufficient agreement of individual characteristics. 2- Exhibits 1.3 and 1.5 were fired by the same unknown firearm based on sufficient agreement of individual characteristics. 3- Exhibits 1.3 and 1.5 were not fired by the firearm that shot the test fires on Exhibit 1.1 based on differences on class.
AYVMGM	After microscopic comparison, it was determined that Items# 2 and 4 were fired from the same firearm as test fires Item #1, based on sufficient agreement of class and individual characteristics of the land impression marks. After microscopic comparison, it was determined that Items# 3 and 5 were fired from the same firearm, based on sufficient agreement of class and individual characteristics of the land impression marks. After microscopic comparison, it was determined that Items# 3 and 5 were not fired from the same firearm as test fires Item #1, based on differences of class characteristics.
B42LLK	The Items 01-01, 01-02, and 01-04 bullets were identified as having been fired from the same firearm. The Items 01-03 and 01-05 bullets were eliminated as having been fired from the same firearm as the Items 01-01, 01-02, and 01-04 bullets. The Items 01-03 and 01-05 bullets were identified as having been fired from the same unknown 38 caliber class firearm with eight conventionally rifled lands and grooves with a right hand twist. A caliber within the 38 caliber class includes, but is not limited to, 9mm Luger. A possible manufacturer of the firearm that could have fired these bullets includes, but is not limited to, Hi-Point.
BA8FG2	Items – Description/Visual Examination: Item 1: Three (3) reported test fired 9mm caliber full metal jacket bullets with six (6) lands and grooves right hand twist rifling impression. Items 2 & 4: Two (2) fired 9mm caliber full metal jacket bullets with six (6) lands and grooves right hand twist rifling impression. Items 3 & 5: Tw (2) fired 9mm caliber full metal jacket bullets with eight (8) lands and grooves right hand twist rifling impression. Microscopic Comparison Conclusions: Identification: Based upon the reproducibility of class characteristics and microscopic individual characteristics, the following identifications were made: Lab Item Evidence Type Conclusion 2 & 4 (2) fired projectiles Fired thru the same firearm barrel as Item 1 3 & 5 (2) fired projectiles Fired thru the same firearm barrel Elimination Based upon the difference in individual characteristics, the following eliminations were made: Lab Item Evidence Type Conclusion 3 & 5 (2) fired projectiles Not fired thru the same firearm barrel as Item 1. [Participant created a manually formatted table within the free form text space. This special formatting was not transferable into the final report. Data is presented as is.]
BCGAFM	Item 2 & 4 were microscopically compared to the test standards from the submitted Tanfoglio Witness 9mm firearm and were identified as being fired in the submitted firearm. Items 3 & 5 were compared to the test standards from the submitted Tanfoglio Witness 9mm firearm and were eliminated as having been fired by the submitted firearm.
BEJCYW	Examinations showed Items 2 and 4 were discharged from the Tanfoglio Witness that created

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WebCode	Conclusions
	the bullets in Item 1. Examinations showed Items 3 and 5 were not discharged from the Tanfoglio Witness that created the bullets in Item 1 due to differences in class characteristics. Examinations showed Items 3 and 5 were discharged from the same unknown firearm.
BJV9TY	Items 1, 2, 4 • Items 2 and 4 were Identified to one of the Item 1 bullets. Items 3, 5 • The bullets were Identified to each other. • The bullets were Eliminated to Items 1, 2, and 4 based on a difference in class characteristics. • The bullets have design features consistent with bullets loaded in 9mm Luger caliber cartridges and display rifling characteristics consistent with firearms by Hi-Point, among others.
BR4R3W	1- Item 2 &4 identical, and they fire by the suspect's firearm. 2- Item 3 & 5 identical and fire by same firearm, but not fire from the suspect's firearm.
BV43XW	The questioned recovered bullets (Items 2-4) were discharged from the same firearm as the known test-fired bullets (Item 1). The questioned recovered bullets (Items 3-5) were not discharged from the same firearm as the known test-fired bullets (Item 1)
BVQEPH	A microscopic examination and comparison of the evidence described above revealed the following: Deformed bullets (2, 4) are IDENTIFIED as having been fired from the SAME gun as known test fired bullets (A1 - A3) based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3, 5) are IDENTIFIED as having been fired from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3, 5) are ELIMIATED as having been from the same gun as known test fired bullets (A1 - A3) and deformed bullets (2, 4) based on the observed disagreement of class characteristics.
BWK8K2	Agreements of class and sufficient agreement of individual characteristics confirmed the items 2 and 4 expended bullets were fired from the same firearm that fired the item 1 test standards. Disagreements of class characteristics confirmed the items 3 and 5 expended bullets were not fired from the same firearm that fired the item 1 test standards.
BZ8H3E	Based on microscopic comparisons, it was determined that Items 1, 2, and 4 were all fired from the same firearm; reportedly, a 9mm Luger caliber Tanfoglio, Witness model, semiautomatic pistol with an unknown serial number. Based on differences at the class characteristic level, the Tanfoglio pistol was excluded from firing Items 3 and 5.
CDQRXJ	After microscopic comparison, it was determined that Items #2 and 4 were fired from the same firearm that fired Items #1A, 1B and 1C based on sufficient agreement of class and individual characteristics of the land impression marks. After microscopic comparison, it was determined that Items #3 and 5 were fired from the same firearm based on sufficient agreement of class and individual characteristics of the land impression marks. After microscopic comparison, it was determined that Items #3 and 5 were NOT fired from the same firearm that fired Items #1A, 1B and 1C based on differences of class characteristics.
CEY4FK	A microscopic comparative examination disclosed the following results: Bullet specimens item#2 and item#4 are identified as having been fired from item#1. Bullet specimens item#3 and item#5 are identified as having been fired from the same unknown firearm.
CK86WH	Examinations showed that Item 2 and Item 4 were discharged from the same firearm as Item 1. Examinations showed that Item 3 and Item 5 were not discharged from the same firearm as Item 1.
CLZ2LC	Items 1A1, 1A2, 1A3, 1B, and 1D (fired bullets) are identified as having been fired from the same firearm. Items 1C and 1E (fired bullets) are identified as having been fired from the same firearm. Items 1C and 1E (fired bullets) are eliminated as having been fired from the same firearm as Items 1A1, 1A2, 1A3, 1B, and 1D (fired bullets). There are differences in class

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TABLE 2

WebCode	Conclusions
	characteristics (number of lands and grooves). Items 1C and 1E are consistent with being .38/9mm caliber class fired metal jacketed bullets displaying conventional rifling specifications of eight lands and grooves with a right twist. Rifling specification and physical characteristics are consistent with bullets fired from firearms produced by RG Industries, Charter Arms, and Hi-Point Firearms. However, no suspected firearm should be overlooked.
CPXJGH	The Item 2,4 bullets were fired in the same firearm as known bullets(Item1).
CV2RGJ	From the microcomparison of the ballistic elements the following is concluded: From the MICROCOMPARATIVE study, group 1 was obtained in relation to the bullets: IND 2 and IND 4 in comparison with the IND 1.1 bullet, it is concluded that there is a POSITIVE identification, and that THERE IS SIGNIFICANT CONCORDANCE OF INDIVIDUAL BRANDS, from which it is determined THAT IF THEY WERE SHOT FROM THE SAME FIREARM. From the MICROCOMPARATIVE study, group 2 was obtained in relation to the bullets: IND 3 and IND 5 in comparison with the IND 1.1 bullet, it was determined that there is a NEGATIVE identification, and that THERE IS NO SIGNIFICANT CONCORDANCE OF INDIVIDUAL BRANDS, from which determines that THEY WERE NOT SHOT BY THE SAME FIREARM.
CV9TQZ	The recovered bullets (items 2 and 4) were identified as having been fired from the same firearm as the test fired bullets (item 1). Agreement of the characteristics is sufficient to determine that the projectiles were fired from the same firearm. The recovered bullets (items 3 and 5) were excluded as having been fired from the same firearm as the test fired bullets (item 1). Differences were found in characteristics sufficient to eliminate the projectiles as having been fired from the same firearm.
CXD8BK	The problem bullets identified as Item 2 and Item 4, were fired from the same Tanfoglio Witness firearm secured to the suspect, while Items 3 and 5 were fired from a different firearm.
CZLDXL	Items 001-02 and 001-04 were fired from the same firearm as Item 001-01 (identification). Items 001-03 and 001-05 were not fired from the same firearm as Item 001-01 (elimination). Items 001-03 and 001-05 were fired from the same firearm (identification).
D4EYXM	The fired bullets in items 001-02 through 001-05 were microscopically compared with the test fired bullets from 001-01 with the following results: 001-02 and 001-04 were identified as having been fired through the barrel of the same firearm as items in 001-01. 001-03 and 001-05 were eliminated as having been fired through the barrel of the same firearm as items in 001-01.
D4FPCH	Through microscopic examination and comparison, it was determined that [Laboratory] Items 001-01, 001-02, and 001-04 were fired by the same firearm. Through microscopic examination and comparison, it was determined that [Laboratory] Items 001-01, 001-02, and 001-04 were not fired by the same firearm as [Laboratory] Items 001-03 and 001-05. Through microscopic examination and comparison, it was determined that [Laboratory] Items 001-03 and 001-05 could not be identified or eliminated as having been fired by the same firearm.
D4K3ZE	Items 2 and 4 were identified as having been fired from the same firearm as that which fired the test fired bullets received with item 1 based on the sufficient agreement of class and individual characteristics. Items 3 and 5 were eliminated as having been fired from the same firearm as that which fired the test fired bullets received with item 1 based on the sufficient disagreement of class characteristics. Items 3 and 5 were identified as having been fired from the same unknown firearm based on the sufficient agreement of class and individual characteristics.
DEXDZP	Items 2 and 4 were identified as having been fired in the same firearm as item 1, assuming no

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TABLE 2

WebCode	Conclusions
	subclass. Items 3 and 5 were eliminated as having been fired in the same firearm as item 1.
DG4UF9	The test fired bullet (Item 1A) and the fired bullets (Items 2 & 4) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, the bullets (Items 2 & 4) are identified as having been fired from the same pistol (recovered Tanfoglio Witness) from which the test fired bullet (Item 1A) was fired. The test fired bullet (Item 1A) and the fired bullets (Items 3 & 5) were microscopically examined and compared. Based on the observed disagreement of their class characteristics, the bullets (Items 3 & 5) are eliminated as having been fired from the same pistol (recovered Tanfoglio Witness) from which the test fired bullet (Item 1A) was fired.
DGKZMB	1. Item 2 and Item 4 were identified within the limits of practical certainty of having been fired from the exhibit firearm. 2. Item 3 and Item 5 were eliminated as having been fired from the exhibit firearm. 3. Item 3 and Item 5 were were identified within the limits of practical certainty of having been fired from the same firearm
DQQWGF	item 1 was compare with all the questioned recovered bullets using Vision X comparison microscope. Items 3 & item 4 were fired from the different firearms while the characteristics in item 2 & item 4 were found same in know firearm (item 1).
DR4ENR	Item 2 and Item 4 were discharged from the same firearm. Item 3 and Item 5 were discharged from the same firearm which is not the same firearm that discharged Item 2 and Item 4. Item 1 was discharged from the same firearm that discharged Item 2 and Item 4.
DX9DYH	Exhibits 2 and 4 (questioned recovered projectiles) were identified as having been fired in the same 9mm firearm as exhibit 1 (test fired projectiles). Exhibits 3 and 5 (questioned recovered projectiles) were identified as having been fired in a second 9mm firearm. Suspect weapons include 9mm Hi-Point firearms; however, any suspect weapon should be submitted to the laboratory for analysis.
DYHERH	The two bullets labeled as Item 2 and Item 4 have been fired in the seized Tanfoglio Witness firearm (Item 1). Moreover, the two bullets labeled as Item 3 and Item 5 have been fired in a same weapon, different from the seized weapon. In conclusion, the 4 bullets recovered from the crime scene have been fired in 2 different weapons: the seize Tanfoglio Witness (Item 2, Item 4) - a second firearm (Item 3, Item 5)
DZXJNV	The Item #2 and #4 bullets were identified as having been fired from the same firearm that fired the Item #1 bullets. The Item #3 and #5 bullets were excluded as having been fired from the firearm that fired the Item #1 bullets.
E32KCY	Items 1 through 5 were examined microscopically. Items 2 through 5 are each consistent in design with a caliber 9mm Luger bullet. Items 2 and 4 were identified as having been fired from the firearm represented by the Item 1 caliber 9mm Luger bullets based on corresponding class and individual characteristics. Items 3 and 5 were identified as having been fired from the same firearm based on corresponding class and individual characteristics. Items 3 and 5 were eliminated as having been fired from the firearm represented by the Item 1 bullets based on sufficient differences in individual characteristics.
E4UHHK	Due to sufficient agreement of class and individual characteristics noted in multiple land-engraved areas, it was concluded that the items 2 and 4 9MM Luger fired bullets collected under case#24-5261 were fired from the same firearm as the item 1 bullets. Due to significant differences noted in the class and individual characteristics, it was determined that items 3 and 5 could not have been fired in the same firearm as items 1, 2, and 4.
E6Q7Q8	1. The Item QA-02 and QA-04 bullets were identified, within the limits of practical certainty, as having been fired by the same firearm as the QA-01 test fired bullets. 2. The Item QA-03 and

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TABLE 2

WebCode	Conclusions
	QA-05 bullets were identified, within the limits of practical certainty, as having been fired by the same firearm. 3. The Item QA-03 and QA-05 bullets were not fired by the same firearm as the QA-01 test fired bullets. 4. There are a minimum of two firearms represented by Items QA-02 through QA-05
E7FGEF	Item #1 (Agency Test Fire) was microscopically examined and compared to Items #2 and #4. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Item #1 (Agency Test Fire) is identified as having been fired from the same firearm as Items #2 and #4. Item #1 (Agency Test Fire) was microscopically examined and compared to Items #3 and #5. Based on the observed disagreement of class and individual characteristics, Item #1 (Agency Test Fire) is eliminated as having been fired from the same firearm as Items #3 and #5. Item #3 was microscopically examined and compared to Item #5. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Item #3 is identified as having been fired from the same firearm as Item #5. Items #3 and #5 expended copper jacketed bullets were examined and found to be consistent with 9mm/ 38 caliber class based on design and physical characteristics. Characteristics of Items #3 and #5 are too broad for entry into the General Rifling Characteristics (GRC) database. The evidence will be returned to the submitter
ECNLR9	Items 1A1 through 1A3, 1B, 1C, 1D, and 1E (fired bullets) were physically examined then microscopically compared using light comparison microscopy. Items 1B and 1D (fired bullets) are identified as having been fired from the same firearm as Items 1A1 through 1A3 (fired bullets). Items 1C and 1E (fired bullets) are identified as having been fired from the same firearm. Items 1C and 1E (fired bullets) are eliminated as having been fired from the same firearm as Items 1A1 through 1A3, 1B, and 1D (fired bullets). There are differences in class characteristics (number of lands and grooves). Items 1A1 through 1A3, 1B, and 1D are consistent with being .38/9mm caliber class fired metal jacketed bullets displaying conventional rifling specifications of six lands and grooves with a right twist. Items 1C and 1E are consistent with being .38/9mm caliber class fired metal jacketed bullets displaying conventional rifling specifications of eight lands and grooves with a right twist. Rifling specifications and physical characteristics are consistent with bullets fired from .38/9mm caliber class firearms produced by RG Industries, Charter Arms, and Hi-Point Firearms. However, no suspected firearm should be overlooked.
EM7FR9	Bullet Analysis: Methodology: Physical (Visual Examination), Electronic Balance/Digital Caliper/Digital Micrometer, Microscopy (Comparison Microscope). Items 2, 3, 4 and 5 are 38 caliber class bullets based upon the diameter. Items 2 and 4, the bullets, were fired through the barrel of the same firearm as Items 1A, 1B and 1C, the test fires, based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the bullets, were not fired through the barrel of the same firearm as Items 1A, 1B, and 1C, the test fires, based upon different class characteristics. Opinion/Interpretation: Items 2, 3, 4 and 5 are consistent with bullets loaded in 9mm Luger, .357 SIG, .357 Magnum, and .38 Special caliber cartridges based upon the weight and style. Items 3 and 5 exhibit characteristics found in (but not limited to) the following firearms: Charter Arms .38 Special caliber firearms and Hi-Point Firearms 9mm Luger caliber firearms.
ENYDWU	Items 2 and 4 were fired from the suspect's firearm. Items 3 and 5 were not fired from the suspect's firearm; however, were fired from the same unknown firearm.
EPEBPU	Items 1-2 and 1-4 were microscopically compared to the test fired bullets in Item 1-1 and found to have areas of corresponding individual characteristics within the land impressions. Items 1-2 and 1-4 were identified as having been fired in Item 1-1. Items 1-3 and 1-5 were

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TABLE 2

WebCode	Conclusions
	microscopically compared to each other and found to have areas of corresponding individual characteristics within the land impressions. They were identified as having been fired in the same firearm. Items 1-3 and 1-5 were microscopically compared to the test fired bullets in Item 1-1 and found to have a different number of lands and grooves. Item 1-3 and 1-5 were eliminated as having been fired in Item 1-1.
EPQALN	We found mulitple matching land impression between the test fired bullets (item 1) and recovered bullets from the scene (item 2 & 4). It is in the closest consideration, that the bullet (item 2 & 4) were fired with the pistol Tanfoglio Witness. The bullets recovered from the scene (item 3 & 5) each have 8 lands and 8 grooves. Therefore they do not correspond to the bullets from the firearm and can be excludet to be fired with the firearm Tanfoglio Witness. The findings contradicts, that the bullets (item 3 & 5) were fired from the found weapon.
ETCY4F	Examinations showed Items 2 (D-1) and 4 (D-3) were discharged from the same firearm as represented by the Item 1 test fires. Examinations showed Items 3 (D-2) and 5 (D-4) were not discharged from the same firearm as represented by the Item 1 test fires. Examinations showed Items 3 (D-2) and 5 (D-4) were discharged from the same unknown firearm.
ETQHQX	Items 1-5 were examined and analyzed using microscopy. The Item 1, 2 and 4 bullets were identified as having been fired from the same firearm based on corresponding class and individual characteristics. The Item 3 and 5 caliber 38 class bullets were identified as having been fired from the same firearm based on corresponding class and individual characteristics. The Item 1, 2 and 4 bullets were eliminated as having been fired from the same firearm as the Item 3 and 5 bullets due to differences in class characteristics.
F23W9U	Items 1A – 1C, 2, 4: The Item 1A bullet was Identified to the Item 2 and 4 bullets. The bullets were Eliminated to the Item 3 and 5 bullets based on a difference in class characteristics. The Item 1B and 1C bullets were used for microscopic comparison purposes. Items 3, 5: The bullets were Inconclusive to each other. The bullets are consistent with bullets loaded in 9mm Luger caliber cartridges. The bullets do not display sufficient discernible rifling characteristics on which to provide a list of possible firearm manufacturers.
F3CTRD	2 firearms were used Bullet 2 and 4 come from 2 shots in the seized firearm (firearm 1) Bullets 3 and 5 come from 2 shots in another firearm (firearm 2)
F446C4	The firearm (Item 1) discharged the Item 2 and Item 4. The firearm (Item 1) did not discharged the Item 3 and Item 5.
F8T9AH	Identification: Deformed bullets (Items 2 and 4) are identified as having been fired in the same gun as test fired bullets (Items 1A, 1B, 1C) based on the observed agreement of class characteristics and sufficient agreement of individual characteristics. Deformed bullets (Items 3 and 5) are identified as having been fired in the same gun based on the observed agreement of class characteristics and sufficient agreement of individual characteristics. Elimination: Deformed bullets (Items 3 and 5) are eliminated as having been fired in the same gun as test fired bullets/deformed bullets (Items 1A, 1B, 1C, 2, 4) based on the disagreement of class characteristics.
F93HX9	Conclusions: Items 2, 4, and Item 1 test fires exhibit patterns similar class characteristics. As a result of microscopic comparison, it was concluded that Item 2 is identified as having been fired from the same firearm that fired Item 1 test fires. Items 3 and 5 exhibit similar class characteristics. As a result of microscopic comparison, it was concluded that Items 3 and 5 are identified as having been fired from the same unknown firearm. Items 3 and 5 are eliminated as having been fired in the same firearm as Item 2 and Item 1 test fires due to a significant disagreement of discernible class characteristics. Firearms that produce similar rifling characteristics as those exhibited on Items 3 and 5 include, but are not limited to: 9mm Luger

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TABLE 2

WebCode	Conclusions
	caliber firearms manufactured by Hi-Point Firearms.
FARUQM	Item 3-5 are discharged from a different firearm - this firearm is the same one for each 2 items (item 2-4).
FAUEM3	After microscopic examination, Items 2 and 4 were identified as having been fired in the suspect's Tanfoglio Witness firearm, based on sufficient agreement of the individual characteristics in the rifling marks. Items 3 and 5 were eliminated as having been fired in the suspect's Tanfoglio Witness firearm based on a difference in class characteristics in the rifling.
FD9YKB	Microscopic examination and comparison revealed that the bullets, Items 2 and 4, were fired from the firearm that fired the bullets, Item 1, based on agreement of class and individual characteristics. Microscopic examination and comparison revealed that the bullets, Items 3 and 5, were not fired from the firearm that fired the bullets, Item 1, based on disagreement of class characteristics. Microscopic examination and comparison revealed that the bullets, Items 3 and 5, were fired from the same firearm based on agreement of class and individual characteristics.
FGVQKK	1. The bullets marked E-1 to E-3, E-4 and E-6, corresponding to item 1, are 9mm caliber, with right rifling (R-6) and were fired by the same firearm (identification). 2. The bullets marked E-5 and E-7, corresponding to item 1, are 9mm caliber, with right rifling (R-8) and were fired by the same firearm (identification).
FHP849	As a result of my observations, I formed the opinion that the fired bullets (Items 2 and 4) had been discharged by the exhibit pistol (Item 1). Further, as a result of my observations, I formed the opinion that the fired bullets (Items 3 and 5) had been discharged by the same unknown firearm.
FJFMYC	First. The three known bullets, identified as #1, DO present characteristics of having been fired through the barrel of the same firearm that fired the exhibits identified as #2 and #4. Second. The three known bullets, identified as #1, DO NOT present characteristics of having been fired through the barrel of the same firearm that fired the exhibits identified as #3 and #5.
FJH79U	Items 2 and 4 were Identified to Item 1. Items 3 and 5 were Identified to each other. Items 3 and 5 were Eliminated to Item 1 based on a difference in class characteristics. Items 3 and 5 are consistent with bullets loaded in 9mm Luger caliber cartridges based on their design features. Item 3 displays rifling characteristics similar to firearms by Hi-Point, among others.
FKWLFG	Two (2) of the four (4) bullets collected at the crime scene marked as item 2 and item 4. Match their individual characteristics with the bullets obtained by firing the firearm, Tanfoglio Witness, seized by the police from a suspect.
FNC9UL	Results of Examinations: Item 1 consists of three (3) 9mm Luger (.38 caliber family) bullets, which are indicated as coming from a Tanfoglio Witness pistol. Item 2 and Item 4 are two (2) 9mm/.38 caliber family bullets. The Item 2 and Item 4 bullets were identified as having been fired from the barrel that fired the Item 1 bullets. Item 3 and Item 5 are two (2) 9mm/.38 caliber family bullets. The Item 3 and Item 5 bullets were identified as having been fired from the barrel of the same firearm but were excluded as having been fired from the barrel of the firearm that fired the Item 1, Item 2 and Item 4 bullets.
FNDXJC	A microscopic examination and comparison of the evidence described above revealed the following: Deformed Bullets (2, 4) are IDENTIFIED as having been fired from the SAME gun as Known Test Fired Bullets (A1, A2, A3) based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed Bullets (3, 5) are IDENTIFIED as having been fired from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed Bullets (3, 5) are ELIMINATED as having been fired from the same gun as Known

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TABLE 2

WebCode	Conclusions
	Test Fired Bullets (A1, A2, A3), (2, 4) based on the observed disagreement of class characteristics.
FRUENB	The bullet identified as evidence ITEM 2 recovered and questioned, corresponds to the 9 MM LUGER caliber, it is concluded that there is a correspondence with ITEM 1 consisting of 3 bullets fired from the confiscated Tanfoglio Witness firearm. The bullet identified as evidence ITEM 3 recovered and questioned corresponds to the 9 MM LUGER caliber, it is concluded that there is no correspondence with ITEM 1 consisting of 3 bullets fired from the confiscated Tanfoglio Witness firearm. The bullet identified as evidence ITEM 4 recovered and questioned, corresponds to the 9 MM LUGER caliber, it is concluded that there is a correspondence with ITEM 1 consisting of 3 bullets fired from the confiscated Tanfoglio Witness firearm. The bullet identified as evidence ITEM 5 recovered and questioned corresponds to the 9 MM LUGER caliber, it is concluded that there is no correspondence with ITEM 1 consisting of 3 bullets fired from the confiscated Tanfoglio Witness firearm.
FTC7UE	The Items 3 and 5 bullets were microscopically compared. These bullets have the same class of rifling and sufficient corresponding individual microscopic marks to conclude that they were fired in a single firearm. The Items 3 and 5 bullets were also microscopically compared to the test-fired bullets in Item 1. Significant differences were found in rifling class marks. The Items 3 and 5 bullets were not fired in the firearm associated with the Item 1 test-fired bullets. The Items 2 and 4 bullets were microscopically intercompared with the test-fired bullets in Item 1. These bullets have the same class of rifling and sufficient corresponding individual microscopic marks to conclude that Items 2 and 4 bullets were fired in the firearm associated with the Item 1 test-fired bullets.
FU4AJF	A Microscopic examination and comparison of the evidence described above revealed the following: Deformed Bullets (2, 4) and Known Test Fires (A1, A2, A3) 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. Deformed Bullets (3, 5) are IDENTIFIED as having been discharged from the SAME gun Based on the observed agreement of their class characteristics and individual characteristics. Deformed Bullets (3, 5) and Known Test Fires (A1, A2, A3) are ELIMINATED as having been discharged from the same gun Based on the observed disagreement of class characteristics.
FUJNTA	The test-fired bullets in item 1 were compared to the fired bullets, items 2 and 4, using a comparison microscope. In my opinion, both bullets were fired in the firearm that generated those test-fires, due to agreement of discernible class characteristics and sufficient agreement of individual characteristics. The test-fired bullets in item 1 were compared to the fired bullets, items 3 and 5, using a comparison microscope. In my opinion, both bullets were eliminated from being fired in the firearm that generated those test-fires, due to significant disagreement of discernible class and individual characteristics.
FWBM79	A microscopic intercomparsion was conducted between the item 1 test shots from the 9mm Luger calibre Tangfolio Witness firearm and the projectiles listed as items 2, 3, 4 and 5. As a result of this comparison I formed the opinion that item 2 and 4 were discharged through the barrel of the Tangfolio firearm. This opinion is based on the observation of agreement of all discernible class characteristics and sufficient agreement of individual characteristics within the rifling marks. I further formed the opinion that items 3 and 5 were not discharged through the barrel of the Tangfolio firearm. This opinion is based on the disagreement of class characteristics.
G3B9NA	The Item 1, Item 2, and Item 4 bullets were fired by the same firearm. The Item 1, Item 2, and Item 4 bullets were fired by a different firearm than the Item 3 and Item 5 bullets. There is

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TABLE 2

WebCode	Conclusions
	agreement of all discernible class characteristics and possible individual characteristics between the Item 3 and Item 5 bullets. However, the potential for subclass carryover could not be eliminated. Therefore, the Item 3 and Item 5 bullets were either fired by the same firearm, or by a different firearm manufactured with the same tool in the same approximate state of wear.
G44ER8	Two of the questioned fired bullets (Items 2 & 4) displayed sufficient agreement in individual/random striae showing that they were fired in the exhibit firearm (Item 1) - Identification. Questioned fired bullets (Items 3 & 5) showed sufficient agreement (as above), showing that they were discharged in the same firearm - Identification, however a different firearm to that which fired the questioned fired bullets (Items 2 & 4).
G4PXQM	Microscopic examination allows me to confirm that two of the four projectiles (Item 2 and Item 4) recovered from the scene were discharged from the Tanfoglio Witness firearm as they match the known test-fired bullets (Item 1). Microscopic examination allows me to confirm that the other two bullets (Item 3 and Item 5) were not discharged by the Tanfoglio Witness firearm. The most likely firearm that could produce the rifling characteristics on both bullets is a Hi-Point model 995 rifle.
G9WL4N	Item 1, 2 and 4 have been fired by the same firearm 1 (A conclusion) Item 3 and 5 have been fired by another firearm 2
GACKLT	The Items 2 and 4 bullets were identified as having been fired from the same firearm as the Item 1 bullets, as a result of the sufficient agreement of individual characteristics exhibited by the bullets. The Items 3 and 5 bullets were identified as having been fired from the same firearm, as a result of the sufficient agreement of individual characteristics exhibited by the bullets. The bullets were not fired from the same firearm as Items 1, 2, and 4 due to differences in class characteristics. The Items 1, 2, and 4 bullets were determined to be of 9mm caliber displaying rifling characteristics of six lands and grooves, right-hand twist. The Items 3 and 5 bullets were determined to be of 9mm caliber displaying rifling characteristics of eight lands and grooves, right-hand twist.
GFGJWH	Items(#2~#5) were microscopically examined to each other. Based on the comparative examination, individual characteristics were observed and it was determined that; Item #2 and #4 were discharged from the same firearms as known cases(item 1), and the other(#3, #5) were not same.
GGT7MJ	The microscopic comparison procedure was carried out between the samples collected at the scene (items two, three, four and five), finding two different groups, formed as follows: GROUP NUMBER ONE: Made up of items two and four, finding microscopic characteristics of identity common to each other, in their grooves and solids, that is, these projectiles were fired by the same firearm. GROUP NUMBER TWO: Made up of items three and five, finding microscopic characteristics of identity common to each other, in their grooves and solids, that is, these projectiles were fired by the same firearm, but different from the one that fired the projectiles. from group number one. Subsequently, a microscopic comparison was carried out between the samples obtained from the pistol-type firearm, brand Tanfoglio Witness, seized from the suspect, which has microscopic identity characteristics, with group number two, that is, the weapon seized from the suspect, I fired the projectiles found at the scene, framed as items two and four.
GQWEAW	PROJECTILES: Item 2, Item 4: The bullets were Identified to the firearm represented by the Item 1 test fires. Item 3, Item 5: The bullets were Identified to each other. The bullets were Eliminated to Item 2, to Item 4 and to the firearm represented by the Item 1 test fires based on a difference in class characteristics.

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TABLE 2

WebCode	Conclusions
GXV6BD	Microscopic comparison determined that bullets Item 2 and Item 4 were discharged through the same barrel as that of the Item 1 test fires. Bullets Item 3 and Item 5 are excluded from having been fired through the Item 1 barrel.
HK6QTV	The projectiles in Items 2 and 4 were fired in the gun that fired the projectiles in Item 1, based on agreement observed in individual characteristics. The projectiles in Items 3 and 5 were not fired in the gun that fired the projectiles in Item 1, based on differences observed in class characteristics.
HWLBED	Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Laboratory Items 1, 2, and 4, were identified as having been fired from the same firearm. Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Laboratory Items 3 and 5, were identified as having been fired form the same firearm. Through macroscopic/microscopic examination and based on significant disagreement of class characteristics, the fired bullets, Laboratory Items 1, 2 and 4, could not have been fired from the same firearm as the fired bullets, Laboratory Items 3 and 5.
HYRQRB	Items 1, 2, 4 Items 2 and 4 were microscopically identified as having been fired from the Item 1 pistol. Items 3, 5 The two bullets were microscopically identified as having been fired from the same unknown firearm; however, they were not fired in the Item 1 pistol. The bullets were determined to be of 9mm caliber displaying rifling characteristics of 8 lands and grooves, right twist. Manufacturers of firearms with similar rifling characteristics include but are not limited to, Hi-Point.
J74C68	Items 2 and 4 were examined and found to be 9mm caliber, jacketed bullets that were fired from a firearm having six lands and grooves with a right twist. Items 2 and 4 were microscopically compared to the bullets submitted under Item 1. Items 2 and 4 were fired from the same firearm as the bullets submitted under Item 1 based on the sufficient agreement of individual characteristics. Items 3 and 5 were examined and found to be 9mm caliber, jacketed bullets that were fired from a firearm having eight lands and grooves with a right twist. Items 3 and 5 were microscopically compared and were found to have been fired from the same firearm based on the sufficient agreement of individual characteristics. Items 3 and 5 exhibit characteristics associated with having been fired from a firearm manufactured by Hi-Point. Items 3 and 5 were not fired from the same firearm as the bullets submitted under Item 1 based on different class characteristics. The above analysis began on 07/01/2024.
J7KJDA	Items 2 and 4 were compared to each other and to the Item 1 test-fires. These bullets have the same class of rifling and sufficient corresponding individual marks to conclude that Items 2 and 4 were fired in the same firearm as Item 1. Items 3 and 5 were compared to each other and to the Item 1 test-fires. Items 3 and 5 have the same class of rifling and sufficient corresponding individual marks to conclude that they were fired in a single firearm. Manufacturers of firearms that could have fired these bullets include but may not be limited to Hi-Point, Charter Arms, and RG Industries. Due to significant differences in rifling class marks, Items 3 and 5 were fired in a different firearm than Item 1.
J8FXV9	3. On 2024-08-05 during the performance of my official duties I received an intact sealed evidence bag with number PA4003884526, not marked, from Case Administration of the Ballistics Section. I opened the bag and found the following exhibits and tests: 3.1 Four (4) 9mm calibre fired bullets marked by me “365739/24” each and “2” to “5” respectively. 3.2 Three (3) 9mm calibre fired test bullets marked by me “365739/24” each “1a” to “1c” respectively. 4. The intention and scope of this forensic examination comprises of the following

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TABLE 2

WebCode	Conclusions
	Ballistics techniques: 4.1 The examination and identification of fired bullets. 4.2 Microscopic individualisation of fired bullets. 5. I examined the fired bullets mentioned in paragraphs 3.1 and 3.2 and compared the class and individual characteristic markings transferred to them by firearm components during the firing process using a comparison microscope and found that they were fired in different firearms as follows: 5.1 The bullets mentioned in paragraph 3.1 marked "365739/24" each and "2" and "4" respectively and the bullets mentioned in paragraph 3.2 were fired in a first (1st) firearm. 5.2 The bullets mentioned in paragraph 3.1 marked "365739/24" each and "3" and "5" respectively were fired in a second (2nd) firearm.
JC7BUB	3. On 2024-08-05 during the performance of my official duties, I received one (1) intact sealed evidence bag with number PA4003884525, not marked, from Case Administration of the Ballistics Section. I opened the bag and found the following exhibits and tests: 3.1 Four (4) 9mm calibre fired bullets, marked by me "365753/24" each and "2", "3", "4" and "5" respectively. 3.2 Three (3) 9mm calibre fired test bullets, marked by me "365753/24" each and "TB1A", "TB1B" and "TB1C" respectively. 4. The intention and scope of this forensic examination comprises of the following Ballistics techniques: 4.1 The examination and identification of fired bullets. 4.2 Microscopic individualization of fired bullets. 5. I examined the bullets mentioned in paragraphs 3.1 and 3.2 and compared the class and individual characteristics markings transferred to them by firearm components during the firing process using a comparison microscope and found: 5.1 The bullets mentioned in paragraph 3.1 marked "365753/24" each and "2" and "4" respectively, were fired from the same firearm that discharged the test bullets mentioned in paragraph 3.2. 5.2 It cannot be determined if the bullets mentioned in paragraph 3.1 marked "365753/24" each and "3" and "5" respectively were fired or were not fired from the same firearm. They were however not fired from the same firearm that discharged the bullets mentioned in paragraph 5.1.
JCRUPA	A microscopic examination and comparison of the evidence described above revealed the following: Deformed Bullets (2, 4) and Test Fires (A1-A3) 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. Deformed Bullets (3,5) 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. Deformed Bullets (3, 5) are eliminated as having been discharged from the same gun as Deformed Bullets (2, 4) and Test Fires (A1-A3) based on the observed disagreement of class characteristics.
JFNH6W	The two (2) fired bullets, items 1.2, and 1.4, were each identified as having been fired in the Tanfoglio pistol, item 1.1, based on the agreement of all discernible class characteristics and agreement of corresponding individual microscopic markings. The two (2) fired bullets, items 1.3, and 1.5, were each eliminated as having been fired in the Tanfoglio pistol, item 1.1, based on a difference in class characteristics (number and widths of lands and grooves). The fired bullet, item 1.5, was consistent in all observable class characteristics (caliber, number of lands and grooves, rifling, twist, and widths of lands and grooves) as the fired bullet, item 1.3. While there is some agreement of microscopic markings, the markings present are insufficient for an identification. The results are inconclusive.
JFR7LA	Deformed bullets (2,4) & test fired bullets (A1-A3) 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. Deformed bullets (3,5) 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. Deformed bullets (3,5) are ELIMINATED as having been discharged from the same gun as deformed bullets (2,4) & test fired deformed bullets (A1-A3) based on the observed disagreement of class

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TABLE 2

WebCode	Conclusions
	characteristics.
JJPQ97	a. The items 1-2 and 1-4 spent projectiles were fired from the suspect's weapon that produced the item 1-1 test fires. "Identification" b. The items 1-3 and 1-5 spent projectiles were fired from the same unknown weapon capable of chambering and firing .38 caliber class ammunition. "Identification" c. The items 1-3 and 1-5 spent projectiles were not fired from the suspect's weapon that produced the item 1-1 test fires. "Exclusion"
JJRC6M	A comparative microscopic examination revealed that all discernible class characteristics of exhibit fired bullets, Item 2 and Item 4, were in agreement with the class characteristics of the test fired bullets discharged from the exhibit firearm, Item 1. A comparative microscopic examination revealed significant agreement in individual (random) characteristics of the exhibit fired bullets, Item 2 and Item 4, and the test fired bullets discharged from the exhibit firearm, Item 1. In my opinion, the exhibit fired bullets, Item 2 and Item 4, were discharged from the exhibit firearm, Item 1.
JK27WF	The bullets (item 2 and item 4) was fierd in the same fire arme as the know bullets (item 1)
JKFWH6	The fired projectiles Items 2-5 were compared microscopically with each other and the test fired projectiles Item 1. Items 2 and 4 were fired from the Tanfoglio Witness pistol used to obtain the tests Item 1. Items 3 and 5 were not fired from the Tanfoglio Witness pistol used to obtain Item 1, however they were fired from a single firearm.
JUBMED	I microscopically compared Items 2 and 4 to each other, and to test fired bullet 1. I identified Items 2 and 4 as being fired in the same firearm as Item 1 test fired bullet 1 based on sufficient agreement of individual characteristics within the land impressions. I microscopically compared Items 3 and 5 to each other. I identified Items 3 and 5 as being fired in a second firearm. Items 3 and 5 are 9 mm caliber bullets with 8 lands and grooves with a right twist. The list of manufacturers of firearms that may have fired Items 3 and 5 includes Hi-Point.
JX9A4V	1. The three bullets (Item 01-01) were identified as having been fired from a single firearm; presumably the Tanfoglio pistol listed in the given scenario. 2. The two bullets (Items 01-02 and 01-04) were identified as having been fired from the Tanfoglio pistol. 3. The two remaining bullets (Items 01-03 and 01-05) were eliminated as having been fired from the Tanfoglio pistol due to differences in general rifling characteristics (GRC). 4. The two bullets (Items 01-03 and 01-05) could neither be identified nor eliminated as having been fired from the same unknown firearm. There is some agreement of individual characteristics and all discernible class characteristics, but insufficient for an identification. The result is inconclusive. 5. The two bullets (Items 01-03 and 01-05) were fired from a barrel having 8 conventional lands and grooves with a right twist. The manufacturer of the firearm that fired the bullets (Items 01-03 and 01-05) is consistent with, but not limited to, Hi-Point Firearms.
JXBUYB	Based on the reproducibility of class and individual characteristics Item 2 and Item 4 were microscopically identified as having been fired from the Tanfoglio firearm that generated the test standards in Item 1. Based on a difference in class characteristics (number of lands and grooves) Item 3 and Item 5 were microscopically eliminated as having been fired from the Tanfoglio firearm that generated the test standards in Item 1.
JY28AG	The test fired bullets in Item 001-01 were microscopically examined and compared with the bullets in Items 001-02 through 001-05 with the following results: 001-02 and 001-04 were identified as having been fired through the barrel of the same firearm as Item 001-01. 001-03 and 001-05 were eliminated as having been fired through the barrel of the same firearm as Item 001-01.
K2N4G8	The following Items were identified1 as having been fired by the same firearm: Item 1 (three

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TABLE 2

WebCode	Conclusions
	bullets said to be test fired by a Tangfolio Model Witness 9mm Luger caliber firearm). Item 2 (a bullet). Item 4 (a bullet). The following Items were fired by a different firearm than Item 1: Item 3 (a bullet). Item 5 (a bullet). It could not be determined if Item 3 and Item 5 were fired by the same firearm. 2 1Source 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. 2The comparative examinations showed agreement of apparent subclass characteristics, but insufficient for an identification, and a lack of corresponding individual characteristics. The comparative examinations were inconclusive.
KBBXXB	Items 2 and 4 were microscopically compared to the Item 1 bullets. The comparison revealed that all of the items had the same class characteristics and sufficient agreement of individual characteristics. Items 2 and 4 were identified as having been fired from the same firearm as the Item 1 bullets. Items 3 and 5 were microscopically compared to the Item 1 bullets. The comparison revealed that Items 3 and 5 had different class characteristics when compared to the Item 1 bullets. Items 3 and 5 were eliminated as having been fired from the same firearm as the Item 1 bullets.
KCL4UC	The Items 01-01, 01-02, and 01-04 bullets were identified as having been fired from the same firearm. The Items 01-03 and 01-05 bullets were eliminated as having been fired from the same firearm as the Items 01-01, 01-02, and 01-04 bullets. The Items 01-03 and 01-05 bullets were identified as having been fired from the same unknown 38 caliber class firearm with eight conventionally rifled lands and grooves with a right hand twist. A possible caliber within the 38 caliber class includes, but is not limited to, 9mm Luger. A possible manufacturer of the firearm that could have fired these bullets includes, but is not limited to, Hi-Point
KD2ET4	Two of the fired bullets, items 2 and 4, were identified as having been fired from the firearm used to generate the fired bullets submitted as item 1. Two of the fired bullets, items 3 and 5, were eliminated as having been fired from the firearm used to generate the fired bullets submitted as item 1 as they exhibit different class characteristics. Items 3 and 5 are most consistent with bullets loaded in 9mm Luger caliber cartridges. The manufacturer of firearms known to exhibit general rifling characteristics similar to items 3 and 5 includes, but is not limited to, Hi-Point Firearms.
KDUCYP	The two (2) 9mm Luger caliber projectiles, recovered at the scene, described in the IDs Emp2 and 4, were fired with the Tanfoglio Brand firear, with a six (6) barrel. Grooves and six (6) solids with a right rotation direction, confiscated from the detained suspect the same day. UNIQUE ORIGIN (POSITIVE MATCH). The two (2) 9 mm Luger caliber projectiles, recovered at the scene, referred to in Id Emp3 and 5, were fired by the same firearms that has eight (8) grooves in the barrel, irregular without establishhing type or Brand; but, different from the firearm, Tanfoglio Brand, confiscated from the arrested suspect the same day.
KED39A	Comparisons and Determinations: The bullets and submitted test fired bullets were examined and microscopically compared with the following results: Two bullets, Lab Items 2 and 4, were identified as having been fired from the same firearm that produced the test fires, Lab Item 1. Two bullets, Lab Items 3 and 5, were determined to be consistent with 9mm Luger caliber. These bullets were eliminated as having been fired from the same firearm that produced the test fires, Lab Item 1, due to differences in class characteristics. These bullets were identified as having been fired from a single firearm. A list of firearms that could have fired these bullets was generated using the AFTE General Rifling Characteristics database. The attached list is intended to be used as an investigative aid and is not all-inclusive. [Participant did not submit the referenced "list".]
KJP2NA	Items 2 and 4 were identified as having been fired by the same firearm that fired Item 1 (Tests)

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TABLE 2

WebCode	Conclusions
	based on the agreement of class and individual characteristics. Items 3 and 5 were fired by the same unknown firearm based on the agreement of class and individual characteristics. Items 3 and 5 were not fired by the firearm that fired Item 1 (Tests) based on differences in class characteristics. A list of firearms in which Items 3 and 5 could have been fired would include, HI-POINT FIREARMS (9mm) CHARTER ARMS (38 SPL), RG INDUSTRIES (38 S&W) or any firearm having similar caliber and rifling characteristics.
KQ7LP2	The fired bullets of items #2 and #4 were microscopically identified as having been fired from the seized Tanfoglio firearm. The bullets of items #3 and #5 were eliminated from having been fired from the seized Tanfoglio firearm due to significant differences in class characteristics. The fired bullets of items #3 and #5 were microscopically identified as having been fired in the same unknown firearm. The fired bullets of items #3 and #5 were examined and found to be consistent with .38 caliber bullets most commonly loaded into 9mm Luger, 38 Special, and 357 Magnum caliber cartridges.
KWBHBL	Comparative examinations of Items 2 and 4 (two bullets) against Item 1 (bullets said to be test fired in a Tanfoglio Model Witness 9mm Luger caliber pistol) show the presence of corresponding features. This means that Items 2 and 4 are consistent with having been fired from the same firearm that fired Item 1.* Comparative examinations of Items 3 and 5 (two bullets) against Item 1 show the presence of different features. This means that Items 3 and 5 were not fired from the same firearm that fired Item 1. Comparative examinations of Item 3 against Item 5 show the presence of corresponding features. This means that Items 3 and 5 are consistent with having been fired from the same firearm, although different than the firearm used to fire Items 1, 2 and 4.* *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.
L7VW6B	SUMMARY OF RESULTS AND INTERPRETATIONS: ITEM 1.1, 1.2, 1.4: The expended bullets were originally components of 9mm class caliber cartridges that had been fired in a barrel with 6 lands and grooves of conventional style rifling with a righthand twist. Items 1.2 and 1.4 were microscopically examined and compared to Item 1.1. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 1.2 and 1.4 are identified as having been fired from the same firearm as Item 1.1. ITEM 1.3, 1.5: The expended bullets were originally components of 9mm class caliber cartridges that had been fired in a barrel with 8 lands and grooves of conventional style rifling with a righthand twist. Item 1.3 and Item 1.5 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 1.3 and 1.5 are identified as having been fired from a second unknown firearm.
LC2ME9	Comparisons The bullets and the test fires reportedly test fired from an evidence Tanfoglio firearm were examined and microscopically compared with the following results: Two bullets (Lab Items 2 and 4) were identified as having been fired from the Tanfoglio firearm. Two bullets (Lab Items 3 and 5) were eliminated as having been fired from the Tanfoglio firearm due to differences in class characteristics. These two bullets were identified as having been fired from a single firearm.
LCJUDY	A test fired bullet, Item 1.A, was microscopically examined and compared with the recovered fired bullets, Item 2 and Item 4. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Item 2 and Item 4 are identified as having been fired from the same firearm as the test fired bullets from Item 1. A test fired bullet, Item 1.A, was microscopically examined and compared with the recovered fired bullets, Item 3 and Item 5. Based on the observed disagreement of class characteristics, Item 3 and Item 5

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TABLE 2

WebCode	Conclusions
	are eliminated as having been fired from the same firearm as the test fired bullets from Item 1.
LD98VG	Two of the submitted bullets (Items 2 and 4) were fired in the suspect's Tanfoglio Witness firearm. The remaining two submitted bullets (Items 3 and 5) were eliminated as being fired from the suspect's Tanfoglio Witness firearm based on differences in class characteristics.
LDRQ3A	The two bullets marked #2 and #4 were fired from the Tanfoglio firearm. The two bullets marked #3 and #5 were not fired from the Tanfoglio firearm.
LJZ6V7	Deformed bullets (2 and 4) are identified as having been fired from the SAME gun as Known Test fired Bullets (A1-A3) based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3 and 5) are identified as having been fired from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3 and 5) are ELIMINATED as having been fired from the SAME gun as Deformed bullets (2, 4) and Known Test fired Bullets (A1-A3) based on the observed disagreement of their class characteristics.
LJZEGB	The fired bullets item 2 and 4 had both been discharged from item 1. The fired bullets item 3 and 5 had not been discharged from item 1, but through the same barrel of a different gun.
LMWXHA	Items 2 and 4 were identified as having been fired from the Item 1 pistol based on sufficient agreement of individual characteristics. Items 3 and 5 were identified as having been fired from the same unknown firearm based on sufficient agreement of individual characteristics (Unknown Firearm A).
LMZGPL	Item 1: Three known test-fired bullets discharged from the suspect's firearm. Items 2-5: Each item is one fired bullet. Comparative examinations of Items 2 and 4 against test fired bullets in Item 1 show the presence of corresponding features. This means that Items 2 and 4 are consistent with having been fired from the same firearm as Item 1. * Comparative examinations of Items 3 and 5 against test fired bullets in Item 1 show the presence of different features. This means that the firearm that fired Item 1 did not fire Items 3 and 5. It could not be determined if Items 3 and 5 were fired in the same firearm. The comparative examinations showed agreement of individual characteristics, but insufficient for an identification. The comparative examinations were inconclusive. *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.
LNTFF6	Item #2 and Item #4 were fired from the from the suspect's firearm. Item #3 and Item #5 were fired from the same firearm, but were not fired from the suspect's firearm.
LQL3H9	Examinations showed Items 2 and 4 were discharged from the same firearm as Item 1. Examinations showed Items 3 and 5 were not discharged from the same firearm as Item 1.
LRBYUP	[No Conclusions Reported.]
LUM4LC	Item 1 was examined and found to be three (3) discharged full metal jacket bullets consistent in design with the .38/9mm caliber class. The Item 1 bullets each contain six (6) land and groove impressions with a right-hand conventional rifling twist. Item 2 and Item 4 were examined and found to be two (2) discharged full metal jacket bullets consistent in design with the .38/9mm caliber class. Item 2 and Item 4 both contain six (6) land and groove impressions with a right-hand conventional rifling twist. Item 3 and Item 5 were examined and found to be two (2) discharged full metal jacket bullets consistent in design with the .38/9mm caliber class. Item 3 and Item 5 both contain eight (8) land and groove impressions with a right-hand conventional rifling twist. Microscopic examinations and comparisons were conducted with Item 1 through Item 5. Item 2 and Item 4 were identified as having been discharged from the same firearm as

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TABLE 2

WebCode	Conclusions
	Item 1. Item 3 and Item 5 were identified as having been discharged from the same unknown firearm. Due to sufficient differences in class and individual characteristics, Item 3 and Item 5 were eliminated as having been discharged from the same firearm as Item 1, Item 2, and Item 4. Firearms which exhibit class characteristics like those present on Item 3 and Item 5 include, but are not limited to, Hi-Point brand caliber 9mm Luger semiautomatic pistols, semiautomatic rifles, and rifle carbines. The following equipment was utilized in this examination: MD-36, Leeds Comparison Microscope, Leeds Comparison Micrometer, A&D Balance. The following definitions relate to the findings provided by the examiner in this report: Identification is an examiner's conclusion that two (2) or more items were marked by the same firearm. The class characteristics and individual characteristics left on the items by the firearm are in sufficient agreement such that it is the examiner's opinion that it is extremely unlikely any firearms other than those identified are capable of producing marks exhibiting sufficient agreement for identification. Elimination is an examiner's conclusion that two (2) or more items were marked by different firearms. The class characteristics and/or the individual characteristics left on the evidence by the firearm are in sufficient disagreement to conclude that the items were discharged by different firearms.
LW4H26	The impressions due to firing on the questioned recovered bullets 2,3,4 and 5 together with those on the testfire bullets were examined under comparison macroscope to determine if they are of the same origin. The impressions on recovered bullets 2 and 4 together with those on the 3 testfire bullets were found to have six (6) land and six (6) groove engraved areas with similar sizes & displacements. Impressions on recovered bullets 3 and 5 were found to have eight (8) land and eight (8) groove areas with similar sizes and displacements but different from those of the testfire bullets. Therefore, recovered bullets 2 and 4 could have been discharged by the suspect's fire arm whereas recovered bullets 3 and 5 could not have been discharged by the suspect's firearm
LW94J8	The Items 2 and 4 bullets were fired from the same firearm that reportedly test-fired the Item 1 bullets. The Items 3 and 5 were fired from the same unknown firearm (not the same firearm that reportedly test-fired the Item 1 bullets).
M476D7	Items 001-02 and 001-04 were identified as having been fired from the Tanfoglio model Witness, 9mm Luger caliber pistol that fired Item 001-01 based on the agreement of class characteristics and individual characteristics observed in the land impressions. Items 001-03 and 001-05 were eliminated to Items 001-02 and 001-04 based on differences in class characteristics. The difference being the rifling configuration. Items 001-03 and 001-05 were identified as having been fired from the same unknown firearm based on the agreement of class characteristics and individual characteristics observed in the land impressions.
M786D3	After physical and microscopic examination of the submitted evidence, against the test-fired specimens (Item 1-1 A,B,C) from the seized Tanfoglio pistol, it is my opinion that: A/ The spent projectiles mentioned above as Items 1-2 and 1-4 were both fired by the seized Tanfoglio pistol (serial number: not provided). "Identification" B/ The spent projectiles mentioned above as Items 1-3 and 1-5 were both fired by the same unknown weapon/barrel capable of firing .38 caliber class (incl. 9mm) ammunition, and having a rifling system of eight (8) lands and grooves with a right twist (unknown suspect weapon). "Identification" C/ Due to a disagreement of class characteristics (G.R.C. of 6 R vs. 8 R, and land and groove width measurements), Items 1-3 and 1-5 were not fired from the seized Tanfoglio pistol. "Exclusion"
M7P4NE	The suspect's firearm was identified as having fired two of the bullets (2 and 4) from the scene. The suspect's firearm was eliminated as having fired two of the bullets (3 and 5) from the scene. Bullets 3 and 5 could not be identified or eliminated as having been fired from the same unknown firearm.

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TABLE 2

WebCode	Conclusions
M8YBM2	The bullets in Items 1, 2 and 4 were compared microscopically with each other. They were identified as having been fired from a single firearm. The bullets Items 3 and 5 were compared microscopically with each other. They were identified as having been fired from a single firearm. They were not fired from the same firearm as Items 1, 2 and 4.
MQHTA9	Item 1 is three bullets reportedly test fired from a TANFOGLIO WITNESS firearm. Items 2 and 4 were identified as having been fired by the same firearm that fired Item 1 based on agreement of class and individual characteristics. Items 3 and 5 were eliminated as having been fired by the same firearm that fired Items 1, 2, or 4 based on differences in class characteristics. Items 3 and 5 were neither identified nor eliminated as having been fired by the same firearm because microscopic comparison of the individual characteristics did not reveal enough information. Items 3 and 5 are 38 / 9mm caliber class bullets fired in a firearm having 8 lands and grooves with a right twist.
MQWJUD	1. The bullets marked E-1 to E-3 (Item 1), the bullet marked E-4 (Item 2), the bullet marked E-6 (Item 4), are caliber 9 mm, with rifling to the right (R-6), and were fired by the same firearm (Identification). 2. The bullet marked E- 5 (Item 3), the bullet marked E-7 (Item 5), are caliber 9 mm, with rifling to the right (R-8), and were fired by the same firearm (Identification).
MUDXA7	2.1 The fired bullets marked 347459/24 2 (item 2) and 4 (item 4) were fired from the same firearm as fired test bullets marked 347459/24 1a TO 347459/24 1c (item 1) 2.2 The fired bullets marked 347459/24 3 (item 3) AND 5 (item 5) were not fired from the same firearm as fired bullets marked 347459/24 2 and 4 and test bullets marked 347459/24 1a TO 347459/24 1c (item 1) but from a second firearm.
N6R9K3	The bullets in Items 2 and 4 were discharged from the same barrel which discharged the bullets in Item 1. These identifications are based on an agreement of both class and individual characteristics. The bullets in Items 3 and 5 were not discharged from the same barrel which discharged the bullets in Item 1. These exclusions are based on differences of class characteristics.
N8J6AW	PROJECTILES: Items 1, 2, and 4: The bullets Items 2 and 4 were Identified to the bullet Item 1A. Items 3 and 5. The bullets were Identified to each other. They were Eliminated from Items 1, 2, and 4 based on a difference in class characteristics. The bullets are 38 caliber class (38/357/9mm) based on their design features and display rifling characteristics similar to firearms by Hi-Point Firearms, RG Industries, and Charter Arms.
NBYP34	Exhibits 2 and 4 (questioned recovered projectiles) were identified as having been fired in the same firearm as exhibit 1(test fired standards). Exhibits 3 and 5 (questioned recovered projectiles) were identified as having been fired in a second 9mm firearm. Suspect weapons include 9mm Hi-Point rifles and carbines; however, any suspect weapon should be submitted for examination.
NFE8C9	The submitted fired bullets (Items 1-1 through 1-3, 2, and 4) were identified as having been fired from the same firearm. The submitted fired bullets (Items 3 and 5) were identified as having been fired from the same unknown firearm. The submitted fired bullets (Items 3 and 5) were eliminated as having been fired from the same firearm as the submitted fired bullets (Items 1-1 through 1-3, 2, and 4) due to differences in class characteristics. The submitted fired bullets (Items 3 and 5) are consistent with .38 caliber class (38 S&W, 38 Special, and 9mm Luger) and was fired from a firearm with eight lands and grooves with a right twist. Some possible firearm manufacturers would include, but not be limited to, the following: Hi-Point, Charter Arms, and RG Industries.
NL4KDW	EXAMINATIONS: Characterize the bullets in Exhibits 110 through 114 and compare the bullets

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TABLE 2

WebCode	Conclusions
	in Exhibits 111 through 114 to the bullets in Exhibit 110 to determine if they can be associated. FINDINGS AND OPINIONS: Exhibit 110 consists of three caliber 9mm copper jacketed fired bullets. Exhibit 111 consists of one caliber 9mm copper jacketed fired bullet. Exhibit 112 consists of one caliber 9mm copper jacketed fired bullet. Exhibit 113 consists of one caliber 9mm copper jacketed fired bullet. Exhibit 114 consists of one caliber 9mm copper jacketed fired bullet. Exhibits 111 and 113 bullets are identified as having been fired from the same firearm as Exhibit 110 bullets. Exhibits 112 and 114 bullets are eliminated as having been fired from the same firearm as Exhibit 110 bullets. Exhibits 112 and 114 are bullets with the same class characteristics; however, due to the lack of sufficient suitable corresponding microscopic markings, it was not possible to identify or eliminate these bullets as having been fired from the same unidentified firearm.
NLGC7D	QB2-QB5 were examined and determined to be: -QB2 and QB4 - Two (2) fired, nominal .38 caliber bullets each with 6- Right conventional rifling characteristics -QB3 and QB5 - Two (2) fired, nominal .38 caliber bullets each with 4- Right conventional rifling characteristics QB2-QB5 were microscopically compared to the fired bullets submitted labeled as being fired by K1. It is my opinion that: -QB2 and QB4 - were fired by K1 based on sufficient agreement of marks seen in the land engraved areas of rifling. See photos for areas of comparison. -QB3 and QB5 - are eliminated as having been fired by K1 based on the difference in subclass characteristics (number of rifling lands and grooves).
NMBYK3	Comparison Results: The Items 1, 2 and 4 bullets were fired by the same firearm. The Items 1, 2 and 4 bullets were not fired by the same firearm(s) as the Items 3 and 5 bullets. There is agreement of all discernible class characteristics and possible individual characteristics between the Item 3 bullet and the Item 5 bullet. However, the potential for subclass carryover could not be eliminated. Therefore, Items 3 and 5 were either fired by the same firearm, or by a different firearm manufactured with the same tool in the same approximate state of wear. Caliber Determination Results The Item 1 bullets were determined to be caliber 38 Class (9mm/38/357). The Item 2 bullet was determined to be caliber 38 Class (9mm/38/357). The Item 3 bullet was determined to be caliber 38 Class (9mm/38/357). The Item 4 bullet was determined to be caliber 38 Class (9mm/38/357). The Item 5 bullet was determined to be caliber 38 Class (9mm/38/357).
NNL4XQ	The two (2) fired bullets, items 1.2 and 1.4, were each identified as having been fired in the Tanfoglio pistol, item 1.1, based on the agreement of all discernable class characteristics and agreement of corresponding individual microscopic markings. The two (2) fired bullets, items 1.3 and 1.5, were each eliminated as having been fired in the Tanfoglio pistol, item 1.1, based on a difference in class characteristics (number of lands and grooves (8 vs 6)). The fired bullet, item 1.3, was consistent in all observable class characteristics (number of lands and grooves, rifling, twist, and widths of lands and grooves) as the fired bullet, item 1.5. While there is some agreement of microscopic markings, the markings present are insufficient for an identification. The results are inconclusive.
NNNM43	Bullet Analysis: Methodology: Physical (Visual Examination), Electronic Balance/Digital Caliper/Digital Micrometer, Microscopy (Comparison Microscope). Items 2, 3, 4, and 5 are 38 caliber class bullets based upon the diameter. Opinion/Interpretation: Items 2, 3, 4, and 5 are consistent with bullets loaded in 9mm Luger caliber cartridges based upon the weight and style. Items 3 and 5 exhibit characteristics found in (but not limited to) the following firearms: Hi-Point Firearms 9mm Luger caliber firearms. Items 2 and 4, the cartridge cases, were fired in Item 1, the Tanfoglio pistol, based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the

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TABLE 2

WebCode	Conclusions
	cartridge cases, were not fired in Item 1, the Tanfoglio pistol, based upon different class characteristics.
NTFXVR	Items 1, 2 and 4 fired bullets were fired through the same gun barrel. Items 3 and 5 fired bullets were fired through the same gun barrel. Items 1, 2 and 4 fired bullets were not fired through the same gun barrel as Items 3 and 5 fired bullets.
NUEWEZ	As a result of these observations, I formed the opinion. The two exhibit fired bullets (Items 2 and 4) were discharged within the exhibit pistol. (GUN 1 - Exhibit - Tanfoglio Witness) The two exhibit fired bullets (Items 3 and 5) were discharged within another firearm. (GUN 2)
NUXRXM	The questioned bullets, identified as item 2 and 4, were a constituent part of 9 mm caliber cartridges and were fired from the Tanfoglio pistol-type firearm. The questioned bullets, identified as item 3 and 5, were a constituent part of 9 mm caliber cartridges, which were not fired with the suspected firearm, the Tanfoglio pistol.
NY87H8	Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Laboratory Items 1, 2, and 4, were identified as having been fired from the same firearm. Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Laboratory Items 3 and 5, were identified as having been fired from the same firearm. Through macroscopic/microscopic examination and based on significant disagreement of class characteristics, the fired bullets, Laboratory Items 1, 2 and 4, could not have been fired from the same firearm as the fired bullets, Laboratory Items 3 and 5.
P2BZW4	Results: 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: Test fired bullet. Items 2 and 4 fired bullets. ELIMINATION: The Items 3 and 5 fired bullets were eliminated as having been fired in the Item 1 pistol based on differences in class characteristics
P2MW39	Items 2 and 4 were identified microscopically as having been fired from 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. Items 3 and 5 were microscopically eliminated as having been fired from the same firearm that reportedly fired the Item 1 test fires due to disagreement of class characteristics. Items 3 and 5 were identified microscopically as having been fired from the same unknown firearm based on agreement of the combination of individual characteristics and all discernible class characteristics. Visual and microscopic examination of Items 3 and 5 revealed them to be 38 / 9mm caliber-class bullets fired from a firearm with a rifling pattern of eight (8) lands and grooves with a right twist. The size, weight, and configuration of Items 3 and 5 are most consistent with bullets typically found loaded in 9mm Luger cartridges. Among the more common firearms that could have possibly fired Items 3 and 5 include, but are not limited to, the following: Hi-Point 9mm Luger semi-automatic pistols. The list of possible firearms was generated using an in-house expanded version of the General Rifling Characteristics (GRC) Database created by the Federal Bureau of Investigation. This is not meant to be an all-inclusive list but rather an investigative aide; and any suspect firearm of the appropriate caliber-class should be submitted for comparison; however, a complete list of the search results will be maintained in the case folder. Current Integrated Ballistics Identification System (IBIS) / BrassTRAX technology in this laboratory is not capable of bullet imaging; therefore, no entry was made. All evidence items are being returned.
P33783	I examined the fired bullets marked 360075/24 A2-A5 and 075TB1A-TB1C and compared

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	the individual class characteristics markings transferred to them by the firearm components during the firing process using a comparison microscope and found: 1. The bullets marked 360075/24 A2 and A4 were fired from the firearm fired tests 075 TB1A-075 TB1C. 2. The bullets marked 360075/24 A3 and A5 were fired from the same firearm but are negative with tests 075 TB1A-TB1C.
P3JHP8	In my opinion, there is sufficient agreement of class and individual characteristics to conclusively determine that items 2 and 4 were fired from the same gun as the bullets from item 1 In my opinion, there is significant disagreement of class characteristics to conclusively determine that items 3 and 5 were NOT fired from the same gun as the bullets from item 1
PBXYN9	Items 2 and 4 were identified microscopically as having been fired from the same firearm as the test fires reportedly from Item 1 based on agreement of the combination of individual characteristics and all discernible class characteristics. Items 3 and 5 were microscopically eliminated as having been fired from the same firearm as the test fires reportedly from Item 1 due to disagreement of discernible class characteristics.
PEVKB6	Items #2 and #4 bullet specimens were identified as having been fired from the Item #1 pistol. The items #3 and #5 bullet specimens were identified as having been fired from the same unknown firearm (they were not fired from the Item #1 pistol).
PEY3GG	Fired projectile, Item 2 and Item 4, were identified as having been fired in the same firearm as test fired projectiles within Item 1 based on agreement of class characteristics and sufficient agreement of individual characteristics within the land impressions. Fired projectile, Item 3 and Item 5, were eliminated from having been fired in the same firearm as fired projectile, Item 2 and Item 4, and test fired projectiles within Item 1, based on disagreement of class characteristics. Fired projectile, Item 3 and Item 5, were identified as having been fired in the same firearm based on agreement of class characteristics and sufficient agreement of individual characteristics within the land impressions. Fired projectile, Item 3 and Item 5, are consistent with 9mm Luger caliber. A list of possible firearms that could have fired Item 3 and Item 5 includes, but is not limited to, the following: HiPoint.
PF9C8T	Item #1.1: These bullets were compared microscopically with Items #1.2 and #1.4. They have agreement in all discernible class characteristics and sufficient agreenment in corresponding individual characteristics for identification. Items #1.2 and #1.4 were fired by the same firearm as Item #1.1. Item #1.1 is eliminated from being fired by the same firearm as Item #1.3 and #1.5 based on class characteristic differences. Items #1.3 and #1.5 These bullets were compared microscopically with each other. They have agreement in all discernible class characteristics and sufficient agreement in corresponding individual characteristics for identification. These bullets were fired from the same firearm.
PJ9LC4	Items 001-02 and 001-04 were identified to Item 001-01 based on the agreement of class characteristics and individual characteristics observed in the land impressions. Items 001-03 and 001-05 were eliminated to Items 001-01, 001-02 and 001-04 based on the disagreement of class characteristics, the difference being number of land and groove impressions. Items 001-03 and 001-05 were identified as having been fired from the same unknown firearm based on the agreement of class characteristics and individual characteristics observed in the land impressions.
PLXP9G	Items 1, 2 and 4: The Item 2 and 4 bullets were Identified to one of the Item 1 test fires. Items 3 and 5: The bullets were Identified to each other. The bullets were Eliminated to the Item 1 test fires based on a difference in class characteristics. The bullets are 38 caliber class (38/357/9mm) based on their design features and the Item 3 bullet displays rifling characteristics similar to firearms by Hi-Point, Charter Arms, and RG Industries, among

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TABLE 2

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	possible others.
PM3MAB	The items 2 and 4 questioned bullets were identified as having been fired from the same firearm as the known bullets (item 1). Because of differences in individual characteristics the items 3 and 5 questioned bullets could not have been fired from the same firearm as a known bullet (item 1).
PMCAZ7	Based on an agreement of class and individual characteristics, Items 2 and 4 were identified as having been fired by Item 1. Based on an agreement of class and individual characteristics, Items 3 and 5 were identified as having been fired by the same unknown firearm. Items 3 and 5 were eliminated as having been fired by Item 1 based on differences in class characteristics.
PQ6FA2	The test fired bullets marked #1 were examined and microscopically compared to the two(2) bullets marked #2 and #4 with positive results (Identification). The two (2) bullets marked #2 and #4 were discharged from the same firearm as the test fires marked #1. The test fired bullets marked #1 were examined and microscopically compared to the two (2) bullets marked #3 and #5 with negative results (Elimination). They were not fired from the same firearm as the test fires. The two bullets (2) marked #3 and #5 were examined and microscopically compared to each other with inconclusive results. The bullets have similar class characteristics: however, they could not be identified or eliminated as having been fired from the same unknown firearm.
Q2NA3A	1. The bullets marked E-1 to E-3 (Item 1), E-4 (Item 2) and E-5 (Item 4), corresponding to piece 1, are caliber 9 mm, with rifling to the right (R-6) and were fired by the same firearm (identification). 2. The bullets marked E-6 (Item 3) and E-7 (Item 5), corresponding to piece 1, are 9 mm caliber, with rifling to the right (R-8) and were fired by the same firearm (identification).
Q4AVVW	A./ Items 1-2 & 1-4 Two (2) .38 caliber class (9mm) FMJ Spent Projectiles WERE BOTH FIRED FROM the submitted suspects 9mm luger caliber, Tanfoglio, Model Witness, Semi-Auto Pistol. B/ A./ Items 1-3 & 1-5 Two (2) .38 caliber class FMJ Spent Projectiles WERE NOT FIRED FROM the submitted suspects 9mm luger caliber, Tanfoglio, Model Witness, Semi-Auto Pistol, due to different class characteristics (rifling). Items 1-3 & 1-5 however WERE FIRED FROM the same unknown weapon capable of chambering and discharging .38 caliber class projectiles and possess and 8R rifling system. No further examination will be conducted.
Q4R32E	The two exhibit fired bullets, (item 2) and (item 4), are consistent with being of 9mm calibre and are impressed with general rifling characteristics of six lands and grooves with a right twist. A comparative microscopic examination between the two exhibit fired bullets, (item 2), (item 4), and the test fired bullets, (item 1), revealed that they had been discharged from the same firearm. The two exhibit fired bullets, (item 3) and (item 5), are consistent with being of 9mm calibre and are impressed with general rifling characteristics of eight lands and grooves with a right twist. A comparative microscopic examination between the exhibit fired bullet, (item 3) and the test fired bullets, (item 1), revealed that they have been discharged from a second unknown firearm. A comparative microscopic examination between the exhibit fired bullet, (item 5) and the test fired bullets, (item 1), revealed that they have been discharged from a third unknown firearm.
Q72UAV	Item's #2,4 were fired from Item #1. Item's 3,5 were fired from the same firearm (not Item #1).
QAFE94	Microscopic examination and comparison of Items 2 and 4 revealed sufficient agreement of individual characteristics to conclude that they were identified as having been fired in the recovered Tanfoglio firearm that produced the Item 1 test exemplars. Microscopic examination and comparison of Items 3 and 5 revealed sufficient agreement of individual characteristics to

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	conclude that they were identified as having been fired from the barrel of the same (unknown) firearm. Items 3 and 5 are eliminated from having been fired from the Item 1, Tanfoglio firearm, based on a difference of class characteristics.
QERHY7	SUMMARY OF RESULTS AND INTERPRETATIONS: ITEM 1.1, 1.2, 1.4: The expended bullets were originally components of 9mm class caliber cartridges that had been fired in a barrel with 6 lands and grooves of conventional style rifling with a right hand twist. ITEM 1.3, 1.5: The expended bullets were originally components of 9mm class caliber cartridges that had been fired in a barrel with 8 lands and grooves of conventional style rifling with a right hand twist. A microscopic examination and comparison revealed the following: Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 1.2 and 1.4 are identified as having been fired from the same firearm as test fires 1.1 (Tanfoglio Witness). Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 1.3 and 1.5 are identified as having been fired from a second unknown firearm.
QJM6Z8	The evidence in items 1 through 5 was analyzed by physical and microscopic examination. The two bullets in items 2 and 4 were 9mm bullets which had been fired from the barrel of a weapon rifled with six lands and grooves, right twist. The two bullets in items 2 and 4 were determined to have been fired from the same weapon as the three bullets (known) in item 1. The two bullets in items 3 and 5 were 9mm bullets which had been fired from the barrel of a weapon rifled with eight lands and grooves, right twist. The two bullets in items 3 and 5 were determined not to have been fired from the same weapon as the three bullets (known) in item 1. The two bullets in items 3 and 5 were fired from one weapon. Further analysis of items 3 and 5 is pending submission of another 9mm weapon for additional comparisons. Item 1 was used for comparison.
QLTRA6	The three submitted fired projectiles, Agency Exhibits 1A to 1C, were identified as having been fired from the same firearm reportedly a Tanfoglio Model Witness pistol. The two submitted fired projectiles, Agency Exhibits 2 and 4, were identified as having been fired from the same firearm as the three submitted fired projectiles, Agency Exhibits 1A to 1C, reportedly fired from a Tanfoglio Model Witness pistol. They were eliminated as having been fired from the same firearm as the two submitted fired projectiles, Agency Exhibits 3 and 5. The two submitted fired projectiles, Agency Exhibits 3 and 5, were identified as having been fired from the same unknown firearm. They were eliminated as having been fired from the same firearm as the three submitted fired projectiles, Agency Exhibits 1A to 1C, reportedly fired from a Tanfoglio Model Witness pistol.
QRWUE6	A Microscopic Examination and Comparison of the evidence described above revealed the following: Deformed Bullets (2, 4) and Known Test Fired Bullets (A1, A2, A3) are IDENTIFIED as having been fired from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed Bullets (3, 5) are IDENTIFIED as having been fired from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed Bullets (3, 5) are ELIMINATED as having been fired from the same gun as Deformed Bullets (2, 4) and Known Test Fired Bullets (A1, A2, A3) based on the observed disagreement of class characteristics.
QVHF7T	Items #1A-T1 through 1A-T3 (Agency test shots reportedly from a Tanfoglio firearm) and Items #1B through 1E (fired bullets) were physically examined then microscopically compared using light comparison microscopy. Items #1B and 1D (fired bullets) are identified as having been fired from the same firearm as Item #1A-T2 (Agency test shot reportedly from a Tanfoglio firearm). Items #1C and 1E (fired bullets) are identified as having been fired from the same

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	firearm. Items #1C and 1E (fired bullets) are eliminated as having been fired from the same firearm as Item #1A-T2 (Agency test shot reportedly from a Tanfoglio firearm). There are differences in class characteristics (number of lands and grooves). Items #1C and 1E are consistent with being a .38 caliber class fired metal jacketed bullet displaying conventional rifling specifications of eight lands and grooves with a right twist. Rifling specifications and physical characteristics are consistent with bullets fired from firearms produced by several manufacturers. No suspected firearm should be overlooked.
QVLXD4	1 v. 2,4 - Microscopic comparisons were conducted between the bullets (Item 2 and Item 4) and the test fired bullets from the firearm (Item 1). The bullets (Item 2 and Item 4) were identified as having been fired from the firearm (Item 1). The identification was based on the agreement of all discernible class characteristics and sufficient agreement of individual markings present on the bullets. 1 v. 3,5 - Microscopic comparisons were conducted between the bullets (Item 3 and Item 5) and the test fired bullets (Item 1). The bullets (Item 3 and Item 5) were not fired from the same firearm as the test fired bullets (Item 1). There exists a disagreement of the discernible class characteristics and individual markings to eliminate the bullets (Item 3 and Item 5) as having been fired from the firearm (Item 1). 3 v. 5 - Microscopic comparisons were conducted between the bullet (Item 3) and the bullet (Item 5). The results of the examination and comparison were inconclusive. It was determined that there lacks sufficient agreement of individual markings to identify or eliminate the bullets (Item 3) and (Item 5) as having been fired from the same firearm; however, similar class characteristics were observed.
QWAEKQ	Items 2 and 4 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 land engraved areas. Items 3 and 5 were eliminated as having been fired by the same firearm as Item 1, 2, and 4. This elimination is based on differences in class characteristics. The difference being the number of lands and grooves. Items 3 and 5 were inconclusive (1) to each other. The size, weight and configuration of Items 3 and 5 are most consistent with bullets typically found loaded in 9mm Luger and 357 SIG cartridges. Class characteristics indicate the following firearms could have possibly fired Items 3 and 5: Hi-Point brand 9mm Luger firearms. This is not meant to be an all-inclusive list but rather an investigative aide; and any suspect firearm(s) of the appropriate caliber-class should be submitted for comparison. A complete list of the search results will be maintained in the case file.
QWPVFK	There were 3 firearms in the scene. The suspects Tanfoglio and two other. Bullet no. 2 and no. 4 were discharged from the suspect's firearm
QZDA4U	EVIDENCE: FDLE Item # Description 1 Three fired bullets (Items 1A – 1C) (represented as test fires by the submitting agency) 2 One fired bullet 3 One fired bullet 4 One fired bullet 5 One fired bullet [Participant created a manually formatted table within the free form text space. This special formatting was not transferable into the final report. Data is presented as is.] RESULTS: PROJECTILES: Items 1C, 2 and 4: The bullets were Identified to each other. The bullets were Eliminated to the Item 3 and 5 bullets, based on a difference in class characteristics. Items 3 and 5: The bullets were Inconclusive to each other. The bullets have design features consistent with bullets loaded in 9mm Luger caliber cartridges. The bullet displays rifling characteristics similar to firearms by Cobra Enterprises, Hi-Point Firearms, Lorcin, and Stallard Arms, among others. 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

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	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 Crime Laboratory Analyst Supervisor [Name]. Questions regarding this report should be addressed to: [Email].
R48QUT	Before examination the bullets recovered from a crime scene were marked TG1 (Item 2), TG2 (Item 3), TG3 (Item 4) and TG4 (Item 5). The bullets test fired from the seized from a suspect´s possession were marked VG1, VG2 and VG3. These bullets were compared using a Leica FSC comparison Microscope. The bullets 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 similarities in the individual characteristics of TG1 and TG3 compared to VG1, VG2 and VG3 it is concluded that these two recovered questioned bullets were fired with the suspect´s firearm.
RGDNW9	The bullets, Exhibits 2 and 4, were identified as having been fired from the same firearm as the test fired bullets, Exhibit 1. The bullets, Exhibits 3 and 5, were eliminated as having been fired from the same firearm as the test fired bullets, Exhibit 1.
RGF73J	As a result of the tests carried out in this laboratory on the samples (ITEM 1 - 2 - 3 - 4 - 5) received for study, it is concluded that: The ITEM 1 corresponds to 9mm caliber projectiles reference/pattern taken from the firearm confiscated from the suspect. The projectiles ITEM 2 (P1/4) and ITEM 4 (P3/4) found at the crime scene correspond to the 9mm caliber. They are uniprocedent with each other and uniprocedent with the reference/pattern projectiles ITEM 1 (PA1 1/3, 2/ 3, 3/3), meaning that they were shot by the Pistol-Type firearm confiscated from the suspect. The projectiles ITEM 3(P2/4) and ITEM 5(P4/4) found at the crime scene correspond to the 9 mm caliber, but they are not uniprocedent with the reference/pattern projectiles ITEM 1(PA1 1/3, 2/3, 3/3), that is to say that they were fired by the same firearm, Pistol type, but different from the one confiscated from the suspect. Based on the above, there is evidence of the presence of at least two (2) firearms, pistol type, 9 mm caliber, involved in the events.
RGVLCE	1) Examination of Exhibit 1 revealed three fired .38 caliber class bullets normally loaded into a 9mm cartridge. a. Submitting paperwork states these bullets originated from a test fire of the collected firearm utilizing Federal American Eagle 9mm Luger 124 grain FMJ ammunition. b. Exhibit 1 is suitable for comparison. 2) Examinations of Exhibits 2-5 revealed each to contain one fired .38 caliber class bullet normally loaded into a 9mm Luger cartridge. a. Exhibits 2 and 4 displayed six lands and grooves with a right-hand twist. b. Exhibits 3 and 5 displayed eight lands and grooves with a right-hand twist. c. Exhibits 2-5 are suitable for comparison. 3) Microscopic comparison revealed the following: a. Exhibits 2 and 4 were fired from the same firearm that fired Exhibit 1 due to a sufficient agreement of individual characteristics. b. Exhibit 3 and Exhibit 5 were fired from the same firearm due to a sufficient agreement of individual characteristics. c. Exhibits 3 and 5 were not fired from the firearm that fired Exhibit 1 due to a disagreement of class characteristics. i. Possible firearms that could have fired Exhibits 3 and 5 include Charter Arms, Hi-Point, and Lorcin 9mm. ii. This list is not all inclusive; any additional suspect firearms should be submitted for microscopic comparison.

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TABLE 2

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RHMN2E	Item 1 (three 9mm Luger caliber bullets said to be test fired from a Tanfoglio, Model witness, 9mm Luger caliber pistol bearing serial number unknown) was examined. Comparative examinations of Items 2 and 4 (two 38 class caliber bullets) against bullets test fired in Item 1 show the presence of corresponding features. This means that Items 2 and 4 are consistent with having been fired from Item 1.* Comparative examinations of Items 3 and 5 (two 38 class caliber bullets) against cartridge cases test fired in Item 1 show the presence of different features. This means that Item 1 did not fire Items 3 and 5. Comparative examinations of Items 3 and 5 showed the presence of corresponding features. This means that Items 3 and 5 are consistent with having been fired from the same firearm.* GRC of Items 3 and 5 will be deferred at this time. If additional work is needed, please contact the Firearm Section at 612-596-7017. *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.
RJFNRY	The bullets Items 2 and 4 were Identified as having been fired from the same firearm the test fire bullets Item 1 (known). The bullets Items 3 and 5 were Eliminated from Items 1, 2, 4 and were fired from a second firearm.
RJZ682	THE BULLETS FROM ITEM 2 AND ITEM 4 WERE FIRED BY THE SAME WEAPON THAT FIRE THE BULLETS FROM ITEM 1
RLCTZD	The three fired bullets(Item 1) were microscopically compared to each other and to the fired bullets(Item 2, 3, 4, 5). Based on agreement of individual characteristics, Item 2, 4 were fired from the same firearm as Item 1. But based on disagreement of individual characteristics, Item 3, 5 were not fired from the same firearm as Item 1.
RVDH93	Items #1 (Agency test fire), #2 and #4 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items #1 (Agency test fire), #2 and #4 are identified as having been fired from the same firearm. Items #3 and #5 were microscopically examined and compared with Item #1 (Agency test fire). Based on the observed disagreement of class characteristics, Items #3 and #5 are eliminated as having been fired from the same firearm as Item #1 (Agency test fire). Item #3 and Item #5 were microscopically examined and compared. There is observed agreement of their class characteristics. However, there is insufficient agreement or disagreement of their individual characteristics to either identify or eliminate the items as having been fired from the same firearm.
RYBUDE	1. Exhibit 1 consists of three fired .38 caliber class bullets normally loaded into a 9mm Luger cartridge. Exhibit 1 is suitable for microscopic comparison. 2. Exhibits 2, 3, 4, and 5 each consists of one fired .38 caliber class bullet normally loaded into a 9mm Luger cartridge. All Exhibits are suitable for microscopic comparison. 3. Microscopic comparison revealed Exhibits 1, 2, and 4 were fired from the same firearm due to sufficient agreement of individual characteristics. 4. Microscopic comparison revealed Exhibits 3 and 5 were fired from the same firearm due to sufficient agreement of individual characteristics, but were not fired from the same firearm as Exhibits 1, 2, and 4 due to disagreement of class characteristics.
T2AJ32	2.1 The fired bullets marked 347455/24 2 (item 2) and 4 (item 4) were fired from the same firearm as fired test bullets marked 347455/24 1a TO 347455/24 1c (item 1) 2.2 The fired bullets marked 347455/24 3 (item 3) AND 5 (item 5) were not fired from the same firearm as fired bullets marked 347455/24 2 and 4 and test bullets marked 347455/24 1a TO 347455/24 1c (item 1) but from a second firearm.
T2VBZR	A test fired bullet from Item 1 was microscopically examined and compared with recovered fired bullets, Items 2 and 4. Based on the observed agreement of their class characteristics and

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	sufficient agreement of their individual characteristics, Items 2 and 4 are identified as having been fired from the same firearm as Item 1. A test fired bullet from Item 1 was microscopically examined and compared with recovered fired bullets, Items 3 and 5. Based on the observed disagreement of their class characteristics, Items 3 and 5 are eliminated as having been fired from the same firearm as Item 1.
T6KBL4	Exhibits 2 and 4 (questioned recovered projectiles) were identified as having been fired in the same 9mm firearm as exhibit 1, test-fired bullets discharged from the suspect's firearm. Exhibits 3 and 5 (questioned recovered projectiles) were not fired in the same firearm as exhibit 1, test-fired bullets discharged from the suspect's firearm, based on differences in class characteristics. Exhibits 3 and 5 (questioned recovered projectiles) could have been fired in the same 9mm firearm based on class characteristics; however, evidence of possible sub-class influence precludes a more conclusive finding. Suspect weapons include 9mm Hi-Point firearms; however, any suspect weapon should be submitted for examination.
T76DZ3	[No Conclusions Reported.]
TAQ4GY	I was requested to compare the submitted bullets, Items 001-02 through 001-05, to the test-fired bullets, Item 001-01, that were reportedly produced from a Tanfoglio brand, model Witness, 9mm Luger caliber pistol. The examination of the evidence in this request began on 8/13/2024. Bullet Examination Item 001-01 consisted of three test-fired bullets that were reportedly fired from a Tanfoglio brand, model Witness, 9mm Luger caliber pistol. I arbitrarily labeled them as Item 001-01-A through 001-01-C. These test-fired bullets were fired in a conventionally-rifled barrel with six lands and grooves with a right-hand twist. Items 001-02 through 001-05 are four fired nominal .38 caliber bullets. Based on class characteristics, I separated these items into two different groups. One group contained Items 001-02 and 001-04, as they were fired in a conventionally-rifled barrel with six lands and grooves with a right-hand twist. The other group contained Items 001-03 and 001-05, as they were fired in a conventionally-rifled barrel with eight lands and grooves with a right-hand twist. I microscopically compared one of the test-fired bullets, Item 001-01-A, to both Items 001-02 and 001-04. I observed agreement of all discernable class characteristics with sufficient agreement of the individual characteristics to conclude that both Items 001-02 and 001-04 were fired in the same firearm that produced the test fires, Item 001-01. I microscopically compared Item 001-03 to Item 001-05. I observed agreement of all discernable class characteristics with sufficient agreement of the individual characteristics to conclude that both were fired in a single firearm. This firearm is different than the one that produced the test fires. I microscopically measured the widths of the land and groove impressions of Items 001-03 and 001-05. Using these measurements and their rifling characteristics, I searched the Association of Firearm and Tool Mark Examiners' (AFTE) General Rifling Characteristics (GRC) database and generated a list of firearms that could have fired Items 001-03 and 001-05. The list is available as an attachment in JusticeTrax Portal; however, if you do not have access to JusticeTrax Portal, please contact your agency's JusticeTrax Portal Administrator. The list may not be all-inclusive; therefore, any firearm with the same general rifling characteristics as Items 001-03 and 001-05 should also be considered.
TGNX97	The bullets (Items 2 and 4) have the same class of rifling as the Tanfoglio Witness firearm (Item 1) and were compared to each other. Sufficient corresponding individual microscopic marks were found between the bullets to conclude that Items 2 and 4 were fired by the Tanfoglio pistol. The bullets (Items 3 and 5) have the same class of rifling and were compared to each other. The result of the comparison is inconclusive. The bullets (Items 3 and 5) have a different class of rifling than the bullets (Items 2 and 4) and are eliminated from having been fired by the Tanfoglio.

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TPKN6A	Results of Examinations: Item 1 consists of three test-fired 9mm Luger (9x19mm) full metal jacketed (FMJ) bullets discharged from a barrel rifled with six grooves, right twist. Items 2 and 4 are .38 caliber/9mm FMJ bullets that were identified as having been fired from the barrel of the Item 1 firearm. Items 3 and 5 are .38 caliber/9mm FMJ bullets fired from a barrel rifled with eight grooves, right twist, and were excluded as having been fired from the barrel of the Item 1 firearm. The Items 3 and 5 bullets were identified as having been fired from the same barrel. A check of the FBI Laboratory General Rifling Characteristics (GRC) and Association of Firearm and Tool Marks Examiners (AFTE) GRC database produced a list of firearms with GRCs like those present on the Item 3 and 5 bullets that includes Hi-Point.
TQXEV6	The bullets Item no 2 and Item 4 were shot from the same weapan as the Item 1.
TQZX3G	RESULTS: PROJECTILES Items 1, 2 and 4: The Item 2 and 4 projectiles were Identified to the Item 1 projectiles. Items 3 and 5: The Item 3 and 5 projectiles were Identified to each other. The Item 3 and 5 projectiles were Eliminated to the Item 1 projectiles based on a difference in class characteristics. The projectiles display rifling characteristics similar to 38 caliber class (38/357/9mm) firearms by Hi-point, Rohm, and RG industries, among others.
TR7M36	Items 2 and 4 were identified microscopically as having been fired from 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. Items 3 and 5 were identified microscopically as having been fired from the same unknown firearm based on agreement of the combination of individual characteristics and all discernible class characteristics. Items 3 and 5 were microscopically eliminated as having been fired from the same firearm that reportedly fired the Item 1 test fires due to disagreement of discernible class characteristics. Visual and microscopic examination of Items 3 and 5 revealed them to be 38 / 9mm caliber-class copper-jacketed bullets fired from a firearm with a rifling pattern of eight (8) lands and grooves with a right twist. The size, weight and configuration of Items 3 and 5 are most consistent with bullets typically found loaded in 9mm Luger cartridges. Among the more common firearms that could have possibly fired Items 3 and 5 include, but are not limited to, the following: Hi-Point Firearms brand of 9mm Luger semi-automatic pistol; Hi-Point Firearms brand of 9mm Luger semi-automatic carbine; and Hi-Point Firearms brand of 9mm Luger semi-automatic rifle. The list of possible firearms was generated using an in-house expanded version of the General Rifling Characteristics (GRC) Database created by the Federal Bureau of Investigation. This is not meant to be an all-inclusive list but rather an investigative aide; and any suspect firearms of the appropriate caliber-class should be submitted for comparison; however, a complete list of the search results will be maintained in the case file. Current Integrated Ballistics Identification System (IBIS) / BrassTRAX technology in this laboratory is not capable of bullet imaging; therefore, no entry was made. Test fires are being retained by the Firearms Identification Laboratory; all other evidence items are being returned.
TTLJV4	The five bullets (1A to 1C, 2, 4) were identified as having been fired from the same firearm. The five bullets (1A to 1C, 2, 4) were eliminated as having been fired from the same firearm as the other two bullets (3, 5). The two bullets (3, 5) were identified as having been fired from the same firearm.
TWLVQ4	Five of the fired fired bullets (1-01, 1-02, and 1-04) were identified as having been fired from the same firearm due to consistent and repeatable pattern areas of marks. Two of the fired bullets (1-03 and 1-05) were identified as having been fired from the same firearm due to consistent and repeatable pattern areas of marks; however, they were eliminated as having been fired from the same firearm as the five fired bullets (1-01, 1-02, and 1-04) due to differences in class and individual characteristics.

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TABLE 2

WebCode	Conclusions
TYU6M8	A) The bullets marked E-1 to E-5 ("Item 1", "Item 2" and "Item 4"), corresponding to piece 1, are 9mm caliber with rifling to the right (R-6) and were fired by the same firearm (Identification). [Initials] August 21, 2024 B) The bullets marked E-6 and E-7 ("Item 3" and "Item 5"), corresponding to piece 1, are 9mm caliber with rifling to the right (R-8) and were fired by the same firearm (Identification). [Initials] August 21, 2024
U37AU2	Items 001-02 and 001-04 were identified as having been fired by the same firearm that fired Items 001-01 based on the agreement of class characteristics and individual characteristics observed in the land impressions. Items 001-02 and 001-04 were eliminated to Items 001-03 and 001-05 based on differences in class characteristics. The difference being the number of land and groove impressions. Items 001-03 and 001-05 were identified as having been fired by the same unknown firearm based on the agreement of class characteristics and individual characteristics observed in the land impressions.
U7JART	The Item 2 fired bullet was examined and determined to be a 38 class (9mm) caliber bullet that was fired from a barrel having conventional style rifling consisting of six lands and grooves with right twist. The Item 3 fired bullet was examined and determined to be a 38 class (9mm) caliber bullet that was fired from a barrel having conventional style rifling consisting of eight lands and grooves with right twist. The Item 4 fired bullet was examined and determined to be a 38 class (9mm) caliber bullet that was fired from a barrel having conventional style rifling consisting of six lands and grooves with right twist. The Item 5 fired bullet was examined and determined to be a 38 class (9mm) caliber bullet that was fired from a barrel having conventional style rifling consisting of eight lands and grooves with right twist. The Item 3 fired bullet and Item 5 fired bullet class characteristics are consistent with those known to be produced by Hi-Point Firearms. This is not an all-inclusive list; therefore, all 38 class (9mm) caliber firearms recovered during the course of this investigation should be submitted, along with Item 3 and Item 5 for comparison purposes. Microscopic Results: The Item 2 and Item 4 fired bullets were microscopically compared to test fired exemplars from Item 1 based on agreement of class characteristics. Both bullets were identified as having been fired by the Item 1 Tanfoglio pistol due to sufficient agreement of individual characteristics. The Item 3 and Item 5 fired bullets were microscopically compared to each other based on agreement of class characteristics. The fired bullets were identified as having been fired by the same unknown firearm due to sufficient agreement of individual characteristics. Based on differences in class characteristics, the Item 3 and Item 5 fired bullets were eliminated as having been fired by the Item 1 Tanfoglio pistol. The significance of these identifications is made to the practical, not absolute, exclusion of all other firearms.
U82YGZ	Based on the agreement of discernible class characteristics and sufficient matching individual detail, fired bullets Items 2 and 4 were identified as having been fired from the same firearm as test fired bullets 1(A-C). Based on the significant disagreement of class characteristics, fired bullets Items 3 and 5 were eliminated as having been fired from the same firearm as test fired bullets Items 1(A-C). Based on the agreement of discernible class characteristics and sufficient matching individual detail, fired bullets Items 3 and 5 were identified as having been fired from the same firearm.
UBYUP2	items 1-2-4 were fired from the Tanfoglio Witness item 3-5 were fired from a second weapon
UD7YUB	1. Examination of Exhibit 1 revealed it to contain three fired 9mm Luger bullets identified as test standards from a suspect weapon. 2. Examination of Exhibits 2, 3, 4, and 5 revealed each to contain one fired .38 caliber class bullet typically loaded in 9mm Luger cartridges. All items are suitable for comparison. a. Microscopic comparison of Exhibit 1 with Exhibits 2 and 4 revealed that they were all fired in the same firearm due to sufficient agreement of individual

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TABLE 2

WebCode	Conclusions
	characteristics. b. Microscopic comparison of Exhibits 3 and 5 revealed that they were both fired from the same firearm due to sufficient agreement of individual characteristics; however, they were not fired from the same firearm as Exhibit 1 due to a disagreement of class characteristics. 3. Exhibits 3 and 5 were fired from a firearm displaying eight lands and grooves with a right-hand twist. a. Possible firearms that could have fired Exhibits 3 and 5 include those manufactured by Hi-Point and Charter Arms. This list is not all inclusive; any suspect firearms should be submitted for microscopic comparison.
UFW2JC	Fired projectile Item 2 and Item 4 were identified as having been fired in the same firearm as test fired projectiles within Item 1 based on agreement of class characteristics and sufficient agreement of individual characteristics within the land impressions. Fired projectile Item 3 and Item 5 were identified as having been fired in the same firearm based on agreement of class characteristics and sufficient agreement of individual characteristics within the land impressions. Fired projectile Item 3 and Item 5 were eliminated from having been fired in the same firearm as fired projectiles Item 2 and Item 4 and test fired projectiles within Item 1 based on disagreement of class characteristics. Fired projectile Item 3 is consistent with 9mm Luger caliber. A list of possible firearms that could have fired Item 3 includes but is not limited to the following: Hi-Point.
UHVPR7	1. A microscopic comparative examination of Bullets B-1 (Item#2) and B-3 (Item #4) against each other and Pistol P-1 (Item#1 Tanfoglio Witness), disclosed that Bullets B-1 and B-3 were discharged in Pistol P-1. 2. A microscopic comparative examination of Bullets B-2 (Item#3) and B-4 (Item #5) against each other, disclosed that Bullets B-2 and B-4 were discharged in the same unknown firearm. 3. Bullets B-2 (Item#3) and B-4 (Item #5) were not discharged from Pistol P-1 (Item#1 Tanfoglio Witness), due to differences in class characteristics (08R vs 06R).
UJVF72	After examining Items# 2, 3, 4 and 5, I certify that this evidence is AMMUNITION as defined by the [State] General Laws, [Chapter #, Section #.] After microscopic comparison, it was determined that Items# 2 and 4 was fired from the suspect's firearm based on sufficient agreement of class and individual characteristics of the land impression marks. After microscopic comparison, it was determined that Items# 3 and 5 were fired from the same firearm based on sufficient agreement of class and individual characteristics of the land impression marks. Items# 3 and 5 was not discharged from the suspect's firearm based on differences of class characteristics.
ULH9T4	After microscopic comparison, it was determined that Case #24-5261 Items #2 and #4, two (2) recovered spent projectiles, WERE FIRED from the subject firearm based on sufficient agreement of class and individual characteristics. There are sufficient quality and quantity of consecutive matching striations to declare an identification. After microscopic examination, it was determined that Case #24-5261 Items #3 and #5, two (2) recovered spent projectiles, WERE NOT FIRED from the subject firearm based on the disagreement of class characteristics. The subject spent projectiles exhibit class characteristics consistent with a polygonal barrel, inconsistent with the traditional cut barrel of the subject firearm.
UN6X2M	PROJECTILES: Items 1, 2, and 4 the bullets were Identified as having been fired from the same firearm. Items 3 and 5 the bullets are 38 caliber class (38/357/9mm) based on their design features and display rifling characteristics similar to firearms by Hi-Point, among others. The bullets were Identified as having been fired from the same firearm. The bullets were Eliminated from having been fired in the same firearm as Items 1, 2, and 4 based on a difference in class characteristics.
UPGKN4	[No Conclusions Reported.]

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TABLE 2

WebCode	Conclusions
UQU3X2	Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Laboratory Items 1, 2, and 4, were identified as having been fired from the same firearm. Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Laboratory Items 3 and 5, were identified as having been fired from the same firearm. Through macroscopic/microscopic examination and based on significant disagreement of class characteristics, the fired bullets, Laboratory Items 1, 2, and 4, could not have been fired from the same firearm as the fired bullets, Laboratory Items 3 and 5.
UV6B6X	Items 001-1A through 001-1C are three nominal .38 caliber fired metal jacketed bullets most similar to bullets loaded in 9mm Luger caliber cartridges based on weight and design features. These bullets are test fired bullets from a Tanfoglio brand firearm. Items 001-2 through 001-5 are four nominal .38 caliber fired metal jacketed bullets most similar to bullets loaded in 9mm Luger caliber cartridges based on weight and design features. I microscopically compared these bullets to the test fired bullets from the Tanfoglio brand firearm. I observed agreement of all discernable class characteristics and sufficient agreement of individual characteristics to conclude that Items 001-2 and 001-4 were fired in the Tanfoglio brand firearm. I observed disagreement of discernable class characteristics between Items 001-3 and 001-5 to the test fired bullets from the Tanfoglio brand firearm. Therefore, Items 001-3 and 001-5 were not fired in the Tanfoglio brand firearm. I microscopically compared Items 001-3 and 001-5 to each other. I observed agreement of all discernable class characteristics and sufficient agreement of individual characteristics to conclude that Items 001-3 and 001-5 were fired in a single firearm.
UXE3CT	Items 1A1, 1A2, 1A3, 1B, 1C, 1D, and 1E (fired bullets) were physically examined then microscopically compared using light comparison microscopy. Items 1A1, 1A2, 1A3, 1B, and 1D (fired bullets) are identified as having been fired from the same firearm. Items 1C and 1E (fired bullets) are eliminated as having been fired from the same firearm as Items 1A1, 1A2, 1A3, 1B, and 1D (fired bullets). There are differences in class characteristics (number of lands and grooves). Item 1C (fired bullet) is inconclusive as having been fired from the same firearm as Item 1E (fired bullet). These items share agreement of class characteristics with some agreement of the individual characteristics observed in the rifling. Items 1C and 1E are consistent with being .38 caliber class fired metal jacketed bullets displaying conventional rifling specifications of eight lands and grooves with a right twist. Rifling specifications and physical characteristics are consistent with bullets fired from firearms produced by several manufacturers. No suspected firearm should be overlooked. 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 it is physically impossible (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. 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

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TABLE 2

WebCode	Conclusions
	characteristics and disagreement of individual characteristics. 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.
UXTPMF	Items 2 and 4 were Identified to the Item 1 firearm. Items 3 and 5 were Identified to each other. They have design features consistent with bullets loaded in 9mm Luger caliber cartridges and display rifling characteristics similar to firearms by Hi-Point Firearms, among possible others. Items 3 and 5 were Eliminated to the Item 1 firearm based on a difference in class characteristics.
UXTRDK	The bullets (2, 4) were identified as being fired from the Tanfoglio Witness pistol (1). The bullets (3, 5) were eliminated as being fired from the same firearm as bullets (2, 4) and were eliminated as being fired from the Tanfoglio Witness pistol (1). The bullets (3, 5) were identified as being fired from the same unknown firearm. The bullets (3, 5) are consistent with 38 caliber class and were fired from a firearm with eight lands and grooves inclined to the right with conventional rifling. Possible firearms from which the bullets (3, 5) may have been fired include, but are not limited to, 38 caliber class firearms marketed by Charter Arms and Hi-Point. Any firearm suspected of involvement in this offense should be submitted for comparison to this evidence.
V27PK8	The bullets No. 2 and 4 where shot from the same weapon as the three comparative bullets discharged from the suspect's weapon (No. 1). Bullets No. 3 and 5 where shot from the same weapon other than three comparative bullets (No. 1).
V69VXR	Items 1-2 and 1-4 were both fired by the weapon that fired the test projectiles in Item 1-1. Items 1-3 and 1-5 were both fired by the same unknown weapon, not the weapon that fired the test in Item 1-1.
V9RU92	The reference fired projectiles, specimen #1, were microscopically compared to the copper jacketed projectiles, specimens #2 through #5. The following was determined: Specimens #2 and #4 were fired from the Tanfoglio Witness pistol, specimen #1. Specimens #3 and #5 were fired from the same weapon. Further examination revealed that they were consistent with .38 caliber class ammunition (which includes 9mm, etc.) and were fired from the barrel of a firearm that possessed eight lands and grooves with a right twist. They were not fired from the Tanfoglio Witness, specimen #1, due to differences in the general class characteristics.
VBX8YF	The item 2 and 4 were fired with the tanfoglio witness pistol.
VEXJUF	After the comparative study procedure, it is determined that the projectiles identified as item 2 and item 4 were fired by the tanfoglio witness firearm possessed by the suspect
VJRDU3	The following items contained sufficient microscopic individual characteristics and were identified as having been fired in item F1-A-A (9mm Luger caliber, Tanfoglio, model Witness, unknown serial number): Item F1-A-B: (1) fired bullet Item F1-A-D: (1) fired bullet 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-C: (1) fired bullet Item F1-A-E: (1) fired bullet The following items contained different class characteristics than item F1-A-A (9mm Luger caliber, Tanfoglio, model Witness, unknown serial number) and were eliminated as having been fired in this firearm. Item F1-A-C: (1) fired bullet Item F1-A-E: (1) fired bullet (inferred)
VM8UYZ	[No Conclusions Reported.]

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TABLE 2

WebCode	Conclusions
VQ3L8W	Items 2 and 4 were fired from the suspects firearm. The items 3 and 5 were not fired from the suspects firearm.
VTF77Y	Microscopic examination and comparison of fired bullets Items 2 and 4 to the test fired bullets Item 1 reveals agreement of all discernable class characteristics along with areas of corresponding individual characteristics establishing that fired bullets Items 2 and 4 were fired from the same firearm as the test fired bullets Item 1. (Identification) Fired bullets 3 and 5 were not fired from the same firearm as the test fired bullets Item1 nor the fired bullets Items 2 and 4, eliminated by class characteristics. (Elimination)
VV2TYL	Items 2 and 4 were fired in the same firearm as the item 1 test fires. Items 3 and 5 were fired in a second firearm. Items 3 and 5 are consistent with bullets from ammunition designated 9mm Luger. A list of makes of firearms that may have fired these items includes, but is not limited to: Hi-Point Firearms.
VZETVD	The three bullets item 1 have the same system traces and show stable recurring individual traces with good quality and quantity. The system traces on the bullets Item 1, Item 2 and item 4 are the same. The individual traces on the bullets item 2 and item 4 show also the same traces as the bullets Item 1. It is clear that the bullets item 2 and item 4 were shot out of the same weapon as the bullets item 1. The bullets item 3 and item 5 have other system traces like the bullets item 1. It is clear that the bullets item 3 and item 5 were shot from a different weapon like the bullets item 1. The traces on the bullets item 3 and item 5 have clear differences in the intensity. The left field impression edges are not pronounced. In some areas there are minor matches in the area by the right field impression edges. The quality and quantity of these traces is not sufficient to make a clear statement here. The barrel of the weapon may be very consumed. Therefore, no secure statement can be made about whether item 3 and item 5 have been shot out of one weapon.
W4RZN6	Results of Examinations: Item 1 contains three copper jacketed round nose bullets that were reportedly test-fired from a 9mm Luger Tanfoglio pistol. Items 2 through 5 are .38 caliber/9mm copper jacketed round nose bullets. Items 2 and 4 were identified as having been fired from the same barrel that fired the Item 1 bullets, which is rifled with six grooves, right twist. Items 3 and 5 were fired from a barrel rifled with eight grooves, right twist. Due to a difference in class characteristics, Items 3 and 5 were excluded as having been fired from the barrel that fired the Item 1, Item 2, and Item 4 bullets. Items 3 and 5 were identified as having been fired from the same barrel. A check of the FBI Laboratory General Rifling Characteristics (GRC) and Association of Firearm and Tool Marks Examiners (AFTE) GRC database produced a list of firearms with GRCs like those present on Item 3 and 5 that includes Hi-Point firearms.
W6LJXJ	Items 1, 2, 3, 4 and 5 were microscopically examined. The Item 2 and 4 caliber 38 class bullets were identified as having been fired from the firearm represented by the Item 1 bullets based on corresponding class and individual characteristics. The Item 3 and 5 caliber 38 class bullets were identified as having been fired from the same firearm based on corresponding class and individual characteristics. Items 3 and 5 were eliminated as having been fired from the firearm represented by the Item 1 bullets due to a difference in class characteristics.
W6P26U	The fired bullets in Items 1(a-c), 2, and 4 were identified as having been fired from the same firearm. The fired bullets in Items 3 and 5 were identified as having been fired from the same firearm; however, they were eliminated as having been fired from the same firearm that fired Items 1(a-c), 2, and 4. The fired bullets in Items 3 and 5 were fired from a 9mm/.38 caliber firearm with a barrel possessing 8 lands/grooves with a right twist, and conventional rifling. Manufacturers known to produce firearms with these rifling characteristics include RG Industries, Charter Arms, and Hi-Point. This list is not all inclusive and any suspected firearms

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TABLE 2

WebCode	Conclusions
	should be submitted for analysis. Identification is the strongest level of positive association.
W8A6HU	Items numbered 2 and 4 are IDENTIFIED with bullets numbered 1 and it is determined that they were fired from the same firearm.
WD2FMQ	Bullet Analysis: Methodology: Physical (Visual Examination), Electronic Balance/Digital Caliper/Digital Micrometer, Microscopy (Comparison Microscope). Items 2, 3, 4 and 5 are 38 caliber class bullets based upon the diameter. O/I: These items are consistent with bullets loaded in 9mm Luger caliber cartridges based upon the weight and style. Items 3 and 5 exhibit characteristics found in (but not limited to) the following firearms: Hi-Point Firearms 9mm Luger caliber firearms. Items 2 and 4, the bullets, were fired through the barrel of Item 1, the Tanfoglio model Witness pistol, based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics. Items 3 and 5, the bullets, were not fired through the barrel of Item 1, the Tanfoglio model Witness pistol, based upon different class characteristics.
WLAYVN	Results of Examinations: Item 1 consists of three bullets reported to be test fires from a 9mm Luger Tanfoglio pistol, Model Witness. Items 2 and 4 are 9mm/.38 caliber bullets that were fired from a barrel rifled with 6 lands and grooves, right twist. The Item 2 and 4 bullets were identified as having been fired from the same barrel as the Item 1 test fires. Items 3 and 5 are 9mm/.38 caliber bullets that were fired from a barrel rifled with 8 lands and grooves, right twist. The Item 3 and 5 bullets were identified as having been fired from the barrel of the same firearm and were eliminated from having been fired from the same barrel as the Item 1, 2, and 4 bullets, due to a difference in class characteristics.
WLCJR4	By means of bullets and its derivatives examination, microscopic and microscopic comparison examinations it was determined that: 1. The bullets corresponding to item 1, identified as E-1, E-2, E-3, bullets corresponding to items 2 and 4, identified as E-4 and E-6, are caliber 9mm, with striation to the right (R-6) and were fired by the same firearm (Identification). [Initials] August/26/2024 2. The bullets corresponding to items 3 and 5, identified as E-5 and E-7, are caliber 9mm, with striation to the right (R-8) and were fired by the same firearm (Identification). [Initials] August/26/2024
WQ6NHM	Items 1A-T1, 1A-T2, 1A-T3, 1B, 1C, 1D, and 1E (fired bullets) were physically examined then microscopically compared using light comparison microscopy. Items 1B and 1D (fired bullets) are identified as having been fired from the submitted firearm (Items 1A-T1, 1A-T2, and 1A-T3 test shots from Tanfoglio Witness firearm). Items 1C and 1E (fired bullets) are identified as having been fired from the same firearm. Items 1C and 1E (fired bullets) are eliminated as having been fired from the submitted firearm (Items 1A-T1, 1A-T2, and 1A-T3 test shots from Tanfoglio Witness firearm). There are differences in the class characteristics (number of lands and grooves). Items 1C and 1E are consistent with being .38 caliber class fired bullets displaying conventional rifling specifications of 8 lands and grooves with a right twist. Rifling specifications and physical characteristics are consistent with bullets fired from firearms produced by Hi-Point Firearms, Charter Arms, and RG Industries, however, no suspected firearm should be overlooked.
WR4M2V	The test fired bullets from the Tanfoglio pistol (Item 1) and the fired questioned bullets (Items 2-5) were examined and microscopically compared. The following was determined: 1. Items 2-5 are .38/9mm caliber class bullets. 2. The fired bullets marked as Items 2 and 4 were fired from a conventionally rifled barrel with six (6) lands and grooves twisting right. 3. The fired bullets marked as Items 3 and 5 were fired from a polygonally rifled barrel with eight (8) lands and grooves twisting right. Items 3 and 5 were not fired by the Tanfoglio pistol (Item 1) due to

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TABLE 2

WebCode	Conclusions
	differences in rifling. The Tanfoglio pistol has a barrel that has conventional rifling with six (6) lands and grooves twisting right. Items 2 and 4 were fired by the Tanfoglio pistol (Item 1). 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. Items 1-5 were retained in the Firearms Section of the [Laboratory] for future reference.
WRWK8G	Items 1, 2 and 4 The bullets were Identified to each other. The bullets were Eliminated to Items 3 and 5 based on a difference in class characteristics. Items 3 and 5 The bullets were Identified to each other. The bullets were Eliminated to Items 1, 2 and 4 based on a difference in class characteristics. The items have design features consistent with bullets loaded in 38 (38/357/9mm) caliber class cartridges and display rifling characteristics similar to RG Industries, Charter Arms, and Hi-Point Firearms.
WYYP48	The recovered bullets in question item 2 and item 4 were fired by the same firearm that fired the bullets fired from known test item 1. The recovered bullets in question 3 and item 5 were not fired by the firearm that fired the bullets fired from known test item 1.
WZ9YRX	Microscopic examination and comparison of the test fired bullets Item 1 to the fired bullets Items 2 and 4 reveals agreement of all discernible class characteristics along with sufficient corresponding individual characteristics establishing that Items 2 and 4 were fired by the same 9mm caliber firearm as Item 1. (IDENTIFICATION) Microscopic examination and comparison of the test fired bullets Item 1 to the fired bullets Items 3 and 5 reveals disagreement of class characteristics establishing that Items 3 and 5 were not fired by the same 9mm caliber firearm as Item 1. (ELIMINATION)
WZVAQ7	Comparisons performed between the test-fired bullets (Item 1) and the two (2) bullets (Items 2 and 4) resulted in an identification. Comparisons performed between the test-fired bullets (Item 1) and the two (2)bullets (Items 3 and 5) resulted in an exclusion.
X4A8UM	Using the Bayesian approach in casework we view our findings under two hypotheses. In this test we used the following hypotheses: H1: The questioned bullet is fired by the submitted firearm. H2: The questioned bullet 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). Exclusions are only reported when the class characteristics are different. Conclusions: Item 2: The findings are extremely more probable when H1 is true than when H1 is true. Item 3: Due to other class characteristics this bullet is fired by another firearm then the submitted firearm. Item 4: The findings are extremely more probable when H1 is true than when H2 is true. Item 5: Due to other class characteristics this bullet is fired by another firearm then the submitted firearm.
X89F7A	1. Examination of Exhibit 1 revealed three (3) known test-fired bullets discharged from a suspect's firearm chambered in 9mm Luger. Exhibit 1 is suitable for examination. 2. Examination of Exhibits 2, 3, 4 and 5 revealed each contains one (1) fired bullet normally loaded into a 9mm Luger cartridge. Exhibits 2, 3, 4 and 5 are suitable for examination. 3. Microscopic comparison revealed Exhibits 2 and 4 were fired from the same firearm as Exhibit 1 due to sufficient agreement of individual characteristics. 4. Microscopic comparison revealed Exhibits 3 and 5 were fired from the same firearm due to sufficient agreement of individual characteristics. 5. Microscopic comparison revealed Exhibits 3 and 5 were not fired from the same firearm as Exhibit 1 due to disagreement of class characteristics. 6. Exhibits 3 and 5 were

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TABLE 2

WebCode	Conclusions
	fired from a firearm displaying 8 lands and grooves with a right hand twist. a. Possible firearms that could have fired Exhibits 3 and 5 include: Hi-Point 995 and Hi-Point C. b. This list is not all inclusive; any suspect firearms should be submitted for microscopic comparison.
X8M42A	Items 2 and 4 were microscopically examined and identified as fired from the same firearm as the Item 1 knowns based on agreement of individual and class characteristics. Items 3 and 5 were microscopically examined and eliminated as fired from the same firearm as the Item 1 knowns (and Items 2 and 4) based on disagreement of class characteristics. Items 3 and 5 were determined to be consistent with 9mm Luger caliber bullets fired from a firearm with rifling system of 8 lands and grooves with a right twist. The list of possible firearms that could have fired Items 3 and 5 includes the following: Hi-Point 9mm Luger caliber semiautomatic pistols and carbines. Items 3 and 5 could neither be identified nor eliminated as fired from the same unknown firearm due to insufficient agreement of individual characteristics seen in land impressions, however similar class characteristics were noted. While there is some agreement on Items 3 and 5 at the indexed areas and specifically in the land impressions, it is not sufficient enough to warrant an identification as the other land impressions do not possess significant agreement of striae despite having many striae present.
X92HMX	Examined the two specimens marked #2 and #4. They weigh 124.64 and 124.70 grains, respectively, and each indicates six lands and six grooves with a right hand twist. They are 38 caliber class discharged full metal jacketed bullets. Examined the two specimens marked #3 and #5. They each weigh 124.66 grains, and each indicates eight lands and eight grooves with a right hand twist. They are 38 caliber class discharged full metal jacketed bullets. The two bullets marked #2 and #4 were microscopically compared to the bullet test standards marked #1 and identified as having been discharged from the same firearm. The two bullets marked #3 and #5 were microscopically compared to each other and identified as having been discharged from the same firearm. The two bullets marked #3 and #5 were microscopically compared to the bullet test standards marked #1 and eliminated as having been discharged from the same firearm.
XCZP9V	Item 1.1 consists of three 9mm caliber bullets which were reportedly fired through a Tanfoglio brand 9mm Luger pistol, model Witness. Items 1.2 and 1.4 are consistent with two 38 caliber bullets with six land and groove impressions with a right twist. These bullets are commonly fired through 9mm Luger firearms. Items 1.2 and 1.4 were microscopically compared to each other and to Items 1.1, 1.3 and 1.5. Based on agreement of all discernible class characteristics and corresponding individual detail in the land impressions, Items 1.2 and 1.4 were identified as having been fired by the same firearm that fired the bullets from Item 1.1. Items 1.3 and 1.5 are consistent with two 38 caliber bullets with eight land and groove impressions with a right twist. These bullets are commonly fired through 9mm Luger firearms. Items 1.3 and 1.5 were microscopically compared to each other and to Items 1.1, 1.2 and 1.4. Based on agreement of all discernible class characteristics and corresponding individual detail in the land impressions, Item 1.3 and Item 1.5 were identified as having been fired by the same firearm. Based on differences in class characteristics, Items 1.3 and 1.5 were eliminated as having been fired by the same firearm that fired the bullets from Item 1.1. Common 9mm Luger firearms with the same general rifling characteristics as Items 1.3 and 1.5 include Hi-Point. This is not meant to be an all-inclusive list; therefore, all 9mm Luger firearms encountered during the course of the investigation should be submitted for comparative examination. Comment: The Identification of cartridge case(s) and/or bullet(s) is made to the practical, not absolute, exclusion of all other firearms. It is not possible to examine all firearms which is a prerequisite for absolute certainty. Sufficient agreement for an identification exists between firearm produced toolmarks when the likelihood another firearm could have fired the cartridge case(s)

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TABLE 2

WebCode	Conclusions
	and/or bullet(s) is so remote as to be considered a practical impossibility.
XH7H3Q	This report refers to exhibits by Lab Number. The following results only apply to the items tested. The Exhibit 1, 2 and 4 bullets were identified as having been fired from the same firearm. The Exhibit 3 and 5 bullets were identified as having been fired from the same firearm. The Exhibit 3 and 5 bullets were excluded as having been fired from the same firearm as the Exhibits 1, 2 and 4 bullets. Firearms that produce characteristics similar to those observed on Exhibits 3 and 5 include, but may not be limited to, 9mm caliber pistols and rifles marketed by Hi-Point, 38 S&W caliber revolvers marketed by RG Industries, and 38 Special caliber revolvers marketed by Charter Arms.
XNEZJR	The fired bullets, items 2 through 4, were compared to the test-fired bullets, item 1, using a comparison microscope. In my opinion item 2 and item 4 were fired in the firearm that produced the test-fired bullets, item 1, based on agreement of discernible class characteristics and sufficient agreement of individual characteristics. It is also my opinion that item 3 and item 5 were not fired in the firearm that produced the test-fired bullets based on observed differences of class and individual characteristics.
XTALK3	The result of the microscopic comparison performed between the questioned elements studied in this report (Items 3, 4 and 5) and the reference bullets obtained during the tests conducted with the Tanfoglio pistol under study, refered as Item 1, conclude as follows: The questioned bullets referenced as Item 2 an Item 4 were fired by the pistol under study. The questioned bullets referenced as Item 3 and Item 5 were fired by a different firearm than Tanfoglio pistol studied in this report.
XVWBQ2	Items 2, 4, and 1 (the test fired bullets) were microscopically examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, the bullets were identified as having been fired from the same firearm that fired Item 1 (the Tanfoglio semiautomatic pistol). Items 3 and 5 were microscopically examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, the bullets were identified as having been fired from the same firearm. Items 3, 5, and 1 (the test fired bullets) were microscopically examined and compared. Based on observed disagreement of class and individual characteristics, the Items 3 and 5 were eliminated as having been fired from the same firearm that fired Item 1 (the Tanfoglio semiautomatic pistol). Items 3 and 5 have physical and design characteristics consistent with being 9mm/.38/.357 caliber. Firearms that could have fired them include the following: Hi-Point semiautomatic, 9mm Luger rifles and pistols NOTE: This list should not be considered all-inclusive of all makes and/or models of firearms that could have possibly fired the listed bullet. A list of firearms that could have fired them is too large for inclusion in this report, but can be provided upon request.
XYWLM2	Items 2, 3, 4, and 5 have physical and design characteristics consistent with being .38/.357/9mm caliber. Items 2, 4, and Item 1 (the test fired bullets) were microscopically examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, the bullets Items 2 and 4 were identified as having been fired from the same firearm that fired Item 1 (Tanfoglio Witness firearm). Items 2, 3, 4, 5, and Item 1 (the test fired bullets) were microscopically examined. Based on observed disagreement of class characteristics, the bullets Items 3 and 5 were eliminated as having been fired from the same firearm that fired Items 2, 4, and 1 (Tanfoglio Witness firearm). Items 3 and 5 were microscopically examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, the bullets were identified as having been fired from the same firearm. Firearms that could have fired Items 3 and 5 include the following: Hi-Point 9mm Luger semiautomatic rifles and 9mm Luger semiautomatic

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TABLE 2

WebCode	Conclusions
	pistols NOTE: This list should not be considered all-inclusive of all makes and/or models of firearms that could have possibly fired the listed bullet.
Y2HM6U	Deformed bullets (2, 4) and Known test fired bullets (A1, A2, A3) are Identified as having been fired from the SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3, 5) are Identified as having been fired from a SAME gun based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (3, 5) are Eliminated as having been fired from the same gun as Deformed bullets (2, 4) and Known test fired bullets (A1, A2, A3) based on the observed disagreement of Class characteristics.
Y2XV93	Items 2 and 4 were identified as having been fired from the same firearm as Item 1, reportedly test fired from a Tanfoglio Model Witness, 9mm Luger caliber semi-automatic pistol. Items 3 and 5 were eliminated as having been fired from the same firearm as Item 1.
Y7V9CF	The Items 2 and 4 fired bullets were fired from the Item 1 firearm. These identifications are based on sufficient agreement of the combination of individual characteristics and all discernible class characteristics. The Items 3 and 5 fired bullets were fired from the same unknown firearm. This identification is based on sufficient agreement of the combination of individual characteristics and all discernible class characteristics. The Items 3 and 5 fired bullets were not fired from the Item 1 firearm. These eliminations are based on differences in class characteristics (number of land and groove impressions). Item 5 is a 38 caliber family fired bullet having conventional rifling, 8 land and groove impressions, and a right hand twist. An Association of Firearm and Tool Mark Examiners (AFTE) General Rifling Characteristics Database search of possible firearms that could have fired Item 5 is attached. Note: The attached GRC search may not be all-inclusive; any recovered firearms of the appropriate caliber class may be submitted to the laboratory for comparison purposes. [Participant did not submit the referenced "search".]
Y83MJL	PROJECTILES: Items 1, 2, and 4. The bullets Items 2 and 4 were Identified as having been fired from the recovered firearm represented by the test fires Item 1. Items 3 and 5: The bullets Items 3 and 5 were Identified as having been fired from the same firearm. However, these bullets were Eliminated from the bullets Items 2 and 4 as well as from the test fires from the recovered firearm Item 1 based on differences in class characteristics. The bullets Items 3 and 5 are 38 caliber class (380/9mm) based on their design features and display rifling characteristics similar to firearms by Hi-Point, among others.
Y877PW	Exhibits 2 and 4 (questioned recovered projectiles) were identified as having been fired in the same 9mm firearm as exhibit 1 (known test-fired projectiles). Exhibits 3 and 5 (questioned recovered projectiles) 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.
Y9CMUU	2.1 The fired bullets marked 347423/24 A2 (item 2) and A4 (item 4) were fired from the same firearm as fired test bullets marked 1TB1 TO 1TB3 2.2 The fired bullets marked 347423/24 A3 (item 3) AND A5 (item 5) were not fired from the same firearm as fired bullets marked 347423/24 A2 and A4 and test bullets marked 1TB1 TO 1TB3 (item 1) but from a second firearm.
YAQ94W	The results strongly support that Item 2 and Item 4 are fired from the same firearm as Item 1. The results strongly support that Item 3 and Item 5 are fired from the same unknown firearm.
YCWUV3	Results of Examinations: Items 1 through 5 are .38 caliber/9mm jacketed bullets. Items 2 and 4 were identified as having been fired from the same barrel as Item 1. Items 3 and 5 were

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TABLE 2

WebCode	Conclusions
	identified as having been fired from the same barrel, but were excluded as having been fired from the same barrel as Item 1 due to a difference in class characteristics.
YE4XXQ	Laboratory Items 001.B (Item 2) and 001.D (Item 4) two copper jacketed FMJ bullets are identified as being fired by the same firearm as Laboratory Item 001.A (Item 1) known test fires from the suspect's firearm. Laboratory Items 001.C (Item 3) and 001.E (Item 5) two copper jacketed FMJ bullets are identified as being fired by the same firearm. Laboratory Items 001.C (Item 3) and 001.E (Item 5) two copper jacketed FMJ bullets are eliminated as being fired by the same firearm as Laboratory Item 001.A (Item 1) known test fires from the suspect's firearm.
YGVWCP	The following exhibits were received packed in one large box with five smaller boxes placed inside, and labelled in part 'ITEM 1', 'ITEM 2', 'ITEM 3', 'ITEM 4' and 'ITEM 5'. 'ITEM 1' contained three 9mm calibre FMJ bullets, with ITEMS '2', '3' '4' & '5' each containing one 9mm calibre FMJ bullet. I made an examination of these exhibits with the following results:- The bullets, "ITEM 2" and "ITEM 4" are all consistent in size and weight to being of 9mm calibre and have class rifling characteristics of six lands and grooves with a right twist. The bullets, "ITEM 3" and "ITEM 5" are all consistent in size and weight to being of 9mm calibre and have class rifling characteristics of eight lands and grooves with a right twist and can be eliminated. A comparison was made between the exhibit bullets, "ITEMS 2 & 4" and those fired in the suspect weapon, "ITEM 1". This examination revealed that "ITEM 2" & "ITEM 4" were identified as having been discharged from the suspect firearm, "ITEM 1".
YJXRVR	Items 2 and 4 were each fired in the same firearm that fired item 1. Items 3 and 5 were not fired from the firearm that fired item 1. Items 3 and 5 share all discernable class characteristics but lack sufficient reproducibility of individual characteristics for identification or elimination; therefore, the results are inconclusive. Items 3 and 5 were fired from a 9mm/.38 caliber firearm with a barrel possessing eight (8) grooves with right twist, conventional rifling. Manufacturers known to produce firearms with these rifling characteristics include Charter Arms, Hi-Point Firearms, Lorcin, RG Industries, and Talon. This list is not all inclusive and any suspect firearm should be submitted to the laboratory for analysis. Identification is the strongest level of positive association.
YKRP2D	The Item 2 and 4 bullets were Identified to the Item 1 bullets. Items 1, 2 and 4 were Eliminated to the Item 3 and 5 bullets based on a difference in class characteristics. Items 3 and 5 were Identified to each other. Items 3 and 5 have design features consistent with bullets loaded 9mm Luger caliber cartridges. The bullets display rifling characteristics similar to firearms by Hi-Point.
YP6CUX	Item 2 and Item 4 were identified as having been fired from the Item 1 firearm. Item 3 and Item 5 were eliminated as having been fired from the Item 1 firearm. Item 3 and Item 5 were identified as having been fired in the same unknown firearm.
YW6PX8	Based on microscopic comparisons, in the opinion of the laboratory: Items 1-2-1 (Item 2) and 1-4-1 (Item 4) projectiles were identified as having been fired by the same firearm that fired item 1-1-1 (Item 1) projectiles. Based on differences in class characteristics: Items 1-3-1 (Item 3) and 1-5-1 (Item 5) projectiles were eliminated as having been fired by the same firearm that fired item 1-1-1 (Item 1) projectiles.
Z3P3CZ	Based on the agreement of individual characteristics and all discernible class characteristics, it was determined that the projectiles from Ex.2 and Ex.4 were both fired in the 9mm pistol (Ex.1). (Identification). Based on significant disagreement of class characteristics, it was determined that the projectiles from Ex.3 and Ex.5 could not have been fired in the 9mm pistol (Ex.1). (Elimination). Based on the agreement of individual characteristics and all discernible class characteristics, it was determined that the projectiles from Ex.3 and Ex.5 were both fired in the

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TABLE 2

WebCode	Conclusions
	same firearm. (Identification).
Z7PBJV	Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Laboratory Items 1, 2, and 4, were identified as having been fired from the same firearm. Through macroscopic/microscopic examination and based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Laboratory Items 3 and 5, were identified as having been fired from the same firearm. Through macroscopic/microscopic examination and based on significant disagreement of class characteristics, the fired bullets, Laboratory Items 1, 2, and 4, could not have been fired from the same firearm as the fired bullets, Laboratory Items 3 and 5.
Z8XPNG	Items 2 and 4 were fired in the same firearm as the item 1 testfires. Items 3 and 5 were were fired in a second firearm. Items 3 and 5 are consistent with bullets from ammunition designated 9mm Luger. A list of makes of firearms that may have fired these items, includes, but is not limited to: Hi-Point Firearms.
ZAPN2E	1. The three test fired bullets (item 01-01) were identified as having been fired from a single firearm, reportedly a 9mm Luger caliber Tanfoglio model Witness pistol. 2. The two bullets (items 01-02 and 01-04) were identified as having been fired from the same firearm as the test fired bullets (item 01-01), reportedly a 9mm Luger caliber Tanfoglio model Witness pistol. The remaining bullets (items 01-03 and 01-05) were eliminated from having been fired from the same firearm as the test fired bullets (item 01-01) and the two bullets (items 01-02 and 01-04) due to class characteristic differences. 3. The two bullets (items 01-03 and 01-05) were identified as having been fired from a single unknown firearm. Commonly encountered firearms with similar rifling characteristics as the bullets include but are not limited to those marketed by Hi-Point Firearms and Charter Arms. Any firearm suspected of involvement in this offense should be submitted for comparisons to the bullets.
ZBGMFD	Items 1, 2, 4: Items 2 and 4 were Identified to Item 1. Items 3, 5: Items 3 and 5 were Inconclusive (+) to each other. Items 3 and 5 were Eliminated to Items 1, 2, and 4 based on a difference in class characteristics. Based on their design features, the bullets are 38 caliber class (38/357/9mm) and are consistent with bullets loaded in 9mm Luger caliber cartridges. The bullets display rifling characteristics similar to firearms by Hi-Point and Lorcin, among others.
ZDLHQ3	Two of the recovered nominal 38 caliber bullets (Item 2 and Item 4) were fired from the same firearm as the test-fired bullets (Item 1). The remaining two recovered nominal 38 caliber bullets (Item 3 and Item 5) were not fired from the same firearm as Item 1. It is inconclusive if Item 3 and Item 5 were fired from the same firearm.
ZJBY4T	2.1 The fired bullets marked 347460/24 2 (item 2) and 4 (item 4) were fired from the same firearm as fired test bullets marked 460TB1a TO 460TB1c (item 1) 2.2 The fired bullets marked 347460/24 3 (item 3) AND 5 (item 5) were not fired from the same firearm as fired bullets marked 347460/24 2 and 4 and test bullets marked 460TB1a TO 460TB1c (item 1) but from a second firearm.
ZMR9LR	Items 1, 2 and 4 were Identified to each other. Items 3 and 5 were Identified to each other. Items 1, 2 and 4 were Eliminated from Items 3 and 5 based on a difference in class characteristics. Items 3 and 5 are 38 caliber class (38/357/9mm) based on their design features and display rifling characteristics similar to firearms by Hi-Point, among others.
ZT2BP8	Microscopic examination and comparison of controls item 1 vs items 2,3,4 & 5 returned the following results: Items 2, 4 - MATCH / POSITIVE. Items 3, 5 - NON MATCH / NEGATIVE. Items 2 and 4 were fired in the same firearm used to produce the controls. Items 3 and 5 were

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TABLE 2

WebCode	Conclusions
	not fired in the same firearm used to produce the controls. Items 3 and 5 had a number of matching features which would suggest that these two bullets had been fired in a second, single firearm, however there was insufficient matching detail to positively confirm this result.
ZTHG2Q	The width of the land engraved areas on bullet exhibits 2 and 4 were similar to those on the known bullet exhibits 1. Further examination of the striations within the land engraved areas for both sets of exhibits showed continuity in alignment suggesting a possible common origin. The width of the land engraved areas on bullet exhibits 3 and 5 were larger than those on test/known bullets 1 suggesting a possible uncommon origin of the impressed marks.
ZYRLZ7	On examination, I found: a) the characteristic marks on the questioned recovered bullets Item 2 and Item 4 to be similar to the characteristic marks on the known test-fired bullets discharged from the suspect's firearm Item 1. b) the characteristic marks on the questioned recovered bullets Item 3 and Item 5 to be dissimilar to the characteristic marks on the known test-fired bullets discharged from the suspect's firearm Item 1. Therefore, I am of the opinion that: a) the recovered bullets Item 2 and Item 4 were fired from the suspect’s firearm. b) the recovered bullets Item 3 and Item 5 were not fired from the suspect’s firearm.

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Additional Comments

TABLE 3

WebCode	Additional Comments
2VJWRU	Identification: Based on the agreement of the individual characteristics observed through the microscopic comparison examination. [Initials] July/30/2024
2ZFJPN	Because of differences observed in class characteristics, Items 03 and 05 (bullets) could not have been fired from the firearm that fired the three bullets in Item 01.
3TCWAU	The test fired bullets submitted as Item 1 were renamed to be Items 1A, 1B, and 1C, respectively.
4BN2DW	1. Identification: Based on the agreement of the individual characteristics observed through the microscopic comparison test. [Initials] 21/ago/2024
4ELKBP	In the opinion of this examiner, Item 1, Item 2 and Item 4 were not fired in the same unknown firearm as Item 3 and Item 5 due to class.
4FG8NT	questioned bullets 3 and 5 were found to match each other and could have been fired from same unknown firearm.
4GF4L3	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. The point of contact for this report is [Name, Email].
4R8794	The conclusions above were based on the assumption that the barrel of the pistol did not display potential subclass characteristics.
6EL2QY	Items 2 through 5 were marked as Bullets B1 through B4, respectively. Item 1, the test shots, are marked as P1.
7LXM6V	The questioned 9mm caliber bullets from submitted envelopes labeled Item 3 and Item 5, were further examined and were determined to be fired from the same, unidentified 9mm caliber firearm.
7NMLQ7	All the items received were poorly marked with limited individual characteristics present. Test to test comparison of Item 1 shows poorly marked and poorly reproducing tests. Items 1, 2, & 4 can be phased on one LI (correspondence not great), but have little to no additional correspondence present. Items 3 & 5 also reproduced poorly with little to no correspondence outside of one small area. There is also a significant amount of axial marks present that do not correspond.
7V8M8J	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

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TABLE 3

WebCode	Additional Comments
	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.
89QV3M	Furthermore, 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 bullets, item refs, 3 and 5 were fired from the same firearm. For clarity a further second firearm than the recovered firearm was used to discharge these bullets.
8A2QQZ	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 Exclusion is based on an analyst's and a co-analyst's independent determination that the observed characteristics of the items in question were marked by different tools. A conclusion of inconclusive is based on the analyst's and the co-analyst's independent determination, that there is agreement of all discernible class characteristics, but, due to an absence, insufficient agreement and/or disagreement, or lack of reproducibility of individual characteristics, no other conclusion can be reached.
8C792P	Thanks to the examination of their characteristics (8 LEAs, Right twist, LEAs width : 2.0 mm-0.079") , the bullets from Item 3 and Item 5 could be fired in a HI POINT model C pistol.
8Y6QCB	The identifications of the bullets 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.
8ZXNGW	The potential for subclass influence could not be evaluated in this case. Conclusions are reported such that it is assumed subclass is eliminated. The evidence barrel would need to be evaluated before rendering an ID conclusion in normal casework involving bullets.
94BPZL	The expended bullets contained in laboratory evidence items 1.3 and 1.5 are consistent with a 38 nominal caliber bullet having 8 lands and grooves and a right-hand twist, weighing 124.6 and 124.2 grains. These characteristics indicate the most likely caliber of the bullet to be 9mm . Manufactures that produce firearms with these same general rifling characteristics include but are not limited to Hi-Point, Lorcin and Talon. This is not meant to be an all-inclusive list; therefore all 9mm firearms encountered during the course of this investigation should be submitted for comparative examination. The expended bullets contained in laboratory evidence item # 1.3 and 1.5 may be suitable for comparison to a suspect firearm.
9KHXZA	The identifications of the bullets 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.
AE79ZD	The following statements would be included on the report: 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

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TABLE 3

WebCode	Additional Comments
	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 it is physically impossible (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. 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 disagreement of individual characteristics. 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 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 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. [Phone number not provided.]
AL9J9Q	1. Identification: Based on the agreement of individual characteristics observed by microscopic comparison examination. 2. The microscopic comparison examination between the bullets marked E-1 to E-5 (“Item” 1, “Item” 2 and “Item” 4) with the bullets marked E-6 and E-7 (“Item” 3 and “Item” 5), corresponding to piece 1, was not carried out due to the incompatibility in the class characteristics, in terms of the number of lands and grooves between an R-6 rifiling (E -1 to E-5) Item 1, Item 2 and Item 4 and R-8 rifling (E-6 and E-7) Item 3 and Item 5.
ANVXXZ	The Item 3 bullet displays rifling characteristics similar to firearms by Hi-Point and Charter Arms, among possible others.
AUJKUR	Identification: Based on the agreement of individual characteristics observed by microscopic comparison examination. The bullet projectiles marked E-1 through E-3 (Item 1), E-4 (Item 2) and E-6 (Item 4) were not compared to bullet projectiles marked E-5 (Item 3) and E -7 (Item 5) due to the disagreement in the class characteristics of the bullet projectiles marked E-1 through E-3 (Item 1), E-4 (Item 2) and E-6 (Item 4) (Rifling R-6) and the class characteristics of bullet projectiles marked E-5 and E-7 (Item 3 and Item 5) (Rifling R-8).
BZ8H3E	The microscopic comparisons, between Items 3 and 5, were inconclusive. There were several areas of agreement; however, it could not be determined whether the tool marks observed are truly individual or are of a type that could carry over from one firearm to the next during the manufacturing process (subclass). Furthermore, there were also several areas of disagreement that could not be reasonably accounted for. The general rifling characteristics (GRCs), associated with Items 3 and 5, were searched through the Association of Firearm and Tool Mark Examiners' GRC Database. Based on a review of the database results, it was determined that 9mm Luger caliber Hi-Point firearms are most consistent with these specimens; however, the returned list may not be all inclusive.

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TABLE 3

WebCode	Additional Comments
CLZ2LC	Items 1A1, 1A2, 1A3, 1B, 1C, 1D, and 1E (fired bullets) were physically examined and then microscopically compared using a combination of light comparison microscopy and virtual comparison microscopy.
CZLDXL	Items 001-03 and 001-05 are consistent with the 38/9mm caliber family. Due to the condition of Items 001-03 and 001-05, a list of firearm manufacturers was not generated.
D4FPCH	CTS Items 3 and 5 had too much shifting in marks to ID or eliminate and item 3 had some secondary marking near the base that obscured detail.
DR4ENR	The rifling class characteristics of Item 2 and 4 consist of 6 L and G with a right twist. The rifling class characteristics of Item 3 and 5 consist of 4 L and G with a right twist.
E6Q7Q8	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.
ENYDWU	Four questioned bullets and three test-fired bullets from the suspect's firearm were submitted for examination. All of the questioned bullets were nominal .38/ 9mm caliber copper jacketed bullets with a full metal jacket design. Items 2 and 4 had been fired through a barrel having six right conventional rifling. Items 3 and 5 had been fired through a barrel having eight right conventional rifling. The test-fired bullets, Item 1, had been fired through a barrel having six right conventional rifling; therefore, Items 3 and 5 could not have been fired from this firearm based on class characteristics. I microscopically compared the submitted bullets. All of the class characteristics of Items 2 and 4, were similar to those of the test-fired bullets, Item 1. I found sufficient agreement in the individual firearm-produced characteristics, including striations within the land impressions, to conclude that these bullets had been fired from the suspect's firearm. All of the class characteristics of Items 3 and 5, were similar to one another. I found sufficient agreement in the individual firearm-produced characteristics, including striations within the land impressions, to conclude that these bullets had been fired from the same unknown firearm
F446C4	The conclusion of the comparison between Item 3 and Item 5 is "Inconclusive"
FAUEM3	The identification of the bullets 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.
FGVQKK	Identification: Based on the agreement of individual characteristics observed by microscopic comparison examination. Regarding conclusion #1 above: E-1 to E-3 correspond to item 1 of CTS identification. E-4 corresponds to item 2 of CTS identification. E-6 corresponds to item 4 of CTS identification. Regarding conclusion #2 above: E-5 corresponds to item 3 of CTS identification. E-7 corresponds to item 5 of CTS identification.
FJFMYC	First. Means that there IS sufficient concordance of class and individual characteristics between the exhibits identified as #1, #2 and #4. Second. It means that there is NO concordance of class and individual characteristics of the indications identified as #1, with the indications identified as #3 and #5.

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TABLE 3

WebCode	Additional Comments
FKWLFG	The two (2) remaining bullets marked as item 3 and item 5, were fired by the same firearm, different from the firearm seized by the police from a suspect, Tanfoglio Witness.
FNC9UL	Methods: Pattern Examination: Toolmarks, whether they are present on evidence items or secondary evidence created in the Laboratory, undergo two stages of comparison. First, the class characteristics are examined and compared. If the class characteristics of the toolmarks are not clearly different, the examination moves to a second stage using comparative microscopy. Comparative examinations of the impressed and striated toolmarks, in at least two items, are conducted to determine if patterns of similarity exist. At the completion of these comparisons, one of the following three opinions is issued: 1) Source Exclusion: Source exclusion is an Examiner's conclusion that two toolmarks did not originate from the same source. This conclusion is an Examiner's opinion that the observed difference(s) in class characteristics provides extremely strong support for the proposition that the two toolmarks came from different sources and extremely weak or no support for the proposition that the two toolmarks came from the same source. A source exclusion based on a minor difference in measured class characteristics requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two toolmarks originated from the same source. This conclusion is an Examiner's opinion that all observed class characteristics are in agreement and the quality and quantity of corresponding individual characteristics is such that the Examiner would not expect to find that same combination of individual characteristics repeated in another source. The basis for a source identification conclusion is an Examiner's opinion that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks originated from the same source and extremely weak support for the proposition that the two toolmarks originated from different sources. A source identification requires a verification and is the Examiner's opinion that the probability that the two toolmarks were made by different sources is so small that it is negligible. 3) Inconclusive: Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and/or quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two toolmarks as having originated from the same source. This conclusion is an Examiner's opinion that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification, or a lack of any observed microscopic similarity. Limitations: Pattern Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to variations in substrate, changes in tool working surfaces from wear, corrosion, subclass, damage, or the employment of unusual tool/work piece orientations, toolmark reproduction may be incomplete or insufficient, as a result it may not be possible for an examiner to reach a source conclusion. Additionally, some tool manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value. Damaged, corroded, or fragmented items may be of little or no value for comparison purposes.
FRUENB	ITEM 1, consisting of 3 bullets, was found to be a match. The bullets marked as ITEM 3 and ITEM 5, it is concluded that there is a correspondence between them and that they were fired by the same firearm. Therefore, ITEM 1 consisting of 3 bullets fired from the confiscated Tanfoglio Witness firearm is excluded.
G44ER8	Two different firearms were identified as being used at the scene.
GQWEAW	Differences observed in Items 3 and 5 included number of land and grooves (6R vs 8R) and the widths of the grooves.

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TABLE 3

WebCode	Additional Comments
HK6QTV	The projectiles in Items 3 and 5 were fired in the same gun, based on agreement observed in individual characteristics.
JJRC6M	A comparative microscopic examination revealed that all discernible class characteristics of exhibit fired bullet, Item 3, were in agreement with the class characteristics of the exhibit fired bullet, Item 5. A comparative microscopic examination revealed significant agreement in individual (random) characteristics of the exhibit fired bullet, Item 3, and the exhibit fired bullet, Item 5. In my opinion, the exhibit fired bullets, Item 3 and Item 5, were discharged from the same firearm, but a different firearm to the exhibit firearm, Item 1.
JK27WF	The bullet (item 3) was fierd by fire arme different from that witch fired the bullet 5
JXBUYB	Based on the reproducibility of class and individual characteristics Item 3 and Item 5 were microscopically identified as having been fired from the same unknown firearm.
KCL4UC	The Items 01-03 and 01-05 bullets were eliminated as having been fired from the same firearm as the Items 01-01, 01-02, and 01-04 bullets due to differences in class characteristics (8 L/G vs 6 L/G).
KQ7LP2	There was a large impressed area along the driving edge of one LEA of items #3 and #5. There were gross continuous striae in this area. I am curious about the origin of this mark: post-manufacture damage to the barrel, if the striae are potential subclass from the manufacture process, etc.
LDRQ3A	The two bullets marked #3 and #5 were fired in the same firearm.
LMZGPL	Items 3 and 5 comparative exams showed them to be inclusive to one another. There were areas of some agreement but There was one area of agreement that showed the potential to be a subclass characteristic which is why the exam results were inconclusive.
M476D7	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.
M7P4NE	I have assumed that the possibility of subclass influence was eliminated by the makers of this proficiency.
MQWJUD	Identification: Based on the agreement of the individual characteristic observed through the microscopic comparison examination.
N8J6AW	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/fromthe 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

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TABLE 3

WebCode	Additional Comments
	same firearm. The submitted items will be returned to your agency. Questions regarding this report should be addressed to: [Email].
NUXRXM	The questioned projectiles identified with items 2 and 4. They were part of 9 mm caliber cartridges and were fired with the suspect firearm Tanfoglio pistol. The questioned projectiles identified with items 3 and 5. They were part of 9 mm caliber cartridges, which were not fired with the suspect Tanfoglio pistol type firearm.
P3JHP8	In my opinion, items 3 and 5 were fired from the same gun
PBXYN9	Items 3 and 5 were identified microscopically as having been fired from the same unknown firearm based on agreement of the combination of individual characteristics and all discernible class characteristics.
PJ9LC4	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.
Q2NA3A	1. Identification: Based on the agreement of individual characteristics observed by microscopic comparison examination. 2. The microscopic comparison examination between the bullets marked E-1 to E-5 (Item 1, Item 2 and Item 4) with the bullets marked E-6 (Item 3) and E-7 (Item 5), corresponding to piece 1, was not carried out due to the incompatibility in the class characteristics, in terms of the number of grooves and lands between an R-6 rifling (E -1 to E-5) Item 1, Item 2 and Item 4 and a rifling R-8 (E-6 and E-7) Item 3 and Item 5.
QVHF7T	1A-T1 through 1A-T3 = test shots from Tanfoglio firearm 1B = Agency Item 2 1C = Agency Item 3 1D = Agency Item 4 1E = Agency Item 5
QVLXD4	Casework Notes Lab Number: 2024-16079 Agency: Collaborative Testing Services, Inc. Offense(s): 75-Proficiency Test Fired Bullet Worksheet Item #1 - No Outer packaging Test Fires, Described as Three known test-fired bullets discharged from the suspect's firearm. Entry #: 1 Exam Start Date: 07/17/2024 Packaging: Sld. box c/ five taped boxes. (1) - One box c/ three fired bullets Description: Three fired bullets - Reported TFs Jacket Composition: copper jacketed Core Composition: Lead Bullet Type: Full metal jacket Base: open, flat Trace Evidence: No observed trace evidence Cleaned: No Damage: impact damage on nose of all three fired bullets Weight (grains): 124.6 Diameter (inches): 0.3540 Magnetic: No #L&G: 6 Twist: right Rifling Design: Conventional Cannelure (s): None Caliber: 9mm Luger Manufacturer: Federal Microscopic Value For Comparison: Good GRC Search: No Checked for Subclass: Yes Additional Notes: -TFs from a Tanfoglio Witness. Exam End Date: 08/07/2024 FIREARMS CASE NOTES Fired Bullet Worksheet Item #2 - No Outer packaging Fired Bullets, Described as Questioned recovered bullet. Entry #: 1 Exam Start Date: 07/17/2024 Packaging: Sld. box c/ (2) - taped box c/ one fired bullet Description: One fired bullet Jacket Composition: copper jacketed Core Composition: Lead Bullet Type: Full metal jacket Base: open, flat Trace Evidence: No observed trace evidence Cleaned: No Damage: No observed damage Weight (grains): 124.4 Diameter (inches): 0.3555 Magnetic: No #L&G: 6 Twist: right Rifling Design: Conventional Cannelure (s): None Caliber: 9mm Luger Microscopic Value For Comparison: Good GRC Search: No Checked for Subclass: Yes Exam End Date: 08/07/2024 FIREARMS CASE NOTES Fired Bullet Worksheet Item #3 - No Outer packaging Fired Bullets, Described as Questioned recovered bullet. Entry #: 1 Exam Start Date: 07/17/2024 Packaging: Sld. box c/ (3) - taped box c/ one fired bullet Description: One fired bullet Jacket Composition: copper jacketed Core Composition: Lead Bullet Type: Full metal jacket Base: open, flat Trace Evidence: No observed trace evidence Cleaned: No

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TABLE 3

WebCode	Additional Comments
	Appears to have been fired in a worn barrel; LIs appear to have been heavily abraded Damage: Weight (grains): 124.2 Diameter (inches): 0.3495 Magnetic: No #L&G: 8 Twist: right Rifling Design: Conventional Cannelure (s): None Caliber: 9mm Luger Microscopic Value For Comparison: Good GRC Search: No Checked for Subclass: Yes Additional Notes: -Heavy abrasions to bearing surface would suggest a different firearm based on visual inspection of the TFs and the fired bullet. Exam End Date: 08/07/2024 FIREARMS CASE NOTES Fired Bullet Worksheet Item #4 - No Outer packaging Fired Bullets, Described as Questioned recovered bullet. Entry #: 1 Exam Start Date: 07/17/2024 Packaging: Sld. box c/ (4) - taped box c/ one fired bullet Description: One fired bullet Jacket Composition: copper jacketed Core Composition: Lead Bullet Type: Full metal jacket Base: open, flat Trace Evidence: No observed trace evidence Cleaned: No Damage: No observed damage Weight (grains): 124.8 Diameter (inches): 0.3550 Magnetic: No #L&G: 6 Twist: right Rifling Design: Conventional Cannelure (s): None Caliber: 9mm Luger Microscopic Value For Comparison: Good GRC Search: No Checked for Subclass: Yes Exam End Date: 08/07/2024 FIREARMS CASE NOTES Fired Bullet Worksheet Item #5 - No Outer packaging Fired Bullets, Described as Questioned recovered bullet. Entry #: 1 Exam Start Date: 07/17/2024 Packaging: Sld. box c/ (5) - taped box c/ one fired bullet Description: One fired bullet Jacket Composition: copper jacketed Core Composition: Lead Bullet Type: Full metal jacket Base: open, flat Trace Evidence: No observed trace evidence Cleaned: No Appears to have been fired in a worn barrel; LIs appear to have been heavily abraded Damage: Weight (grains): 124.4 Diameter (inches): 0.3500 Magnetic: No #L&G: 8 Twist: right Rifling Design: Conventional Cannelure (s): None Caliber: 9mm Luger Microscopic Value For Comparison: Good GRC Search: No Checked for Subclass: Yes Additional Notes: -Heavy abrasions to bearing surface would suggest a different firearm based on visual inspection of the TFs and the fired bullet. Exam End Date: 08/07/2024 Comparison Panel - Entry #1 Exam Start Date: 07/17/2024 Comparison Type - Bullet Item 1 compared to Items 2,4,3,5 Checked for Subclass Yes Remarks -T2T for Item 1 performed on 7-18-24. -Item 1 TF FB v. Item 2 FB. Observed agreement on all LI's. Photographed LI's 1 and 5. -Item 1 TF FB v. Item 4 FB. Observed agreement on all LI's. Photographed LI 1. -Item 1 TF Fb v. Item 3 and 5 FB. Disagreement of class characteristics. 8 land and groove impressions on Items 3 and 5. Item 1 # Item 3 or 5. agreement of class characteristics observed on the Items 3 and 5. -Item 3 FB v. Item 5 FB. On comparison several gross features were observed on both items that agreed. Surrounding striae on the gross features appear to be positioned and angled differently in comparison. Possible engagement of the bearing surface would suggest the anomaly observed in the LI's. Photographed LI 1, 3, 5-8. Lack of agreement and reproducibility of the minute striae in spatial relationship to gross features observed in the land impressions. Conclusions Identification Item 1 TF FB = Item 2 and 4 FB class and sufficient individual characteristics. Elimination Item 1 # Items 3 and 5 different class and/or individual characteristics. Inconclusive Item 3 FB (˜) Item 5 FB class only, insufficient agreement and reproducibility of the minute striae in spatial relationship to gross features observed in the land impressions. Verification (KHART) 1=2=4 Exam End Date 08/07/2024. [Participant created a manually formatted table within the free form text space. This special formatting was not transferable into the final report. Data is presented as is.]
QWAEKQ	Although the Items 3 and 5 had good stria in the LEAs/GEAs, and I was able to index them, the microscope comparison between these items was difficult. The stria did not pop as one would expect to see with how easily they were indexed. Stria was in agreement on only half of several LEAs while the remainder of the LEA was in disagreement. Difficult to eliminate the possibility of sub-class markings.

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TABLE 3

WebCode	Additional Comments
QWPVFK	The bullets from the crime scene and the test fired bullets have 6 LEA, like bullets no. 2 and 4. Bullets no. 3 and 5 have 8 LEA
RGVLCE	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.
RLCTZD	Good
TPKN6A	Methods: General Rifling Characteristics: The appropriate GRC measurements are entered in the database, which then returns a list of all firearms in the database with compatible GRCs. Pattern Examination: Toolmarks, whether they are present on evidence items or secondary evidence created in the Laboratory, undergo two stages of comparison. First, the class characteristics are examined and compared. If the class characteristics of the toolmarks are not clearly different, the examination moves to a second stage using comparative microscopy. Comparative examinations of the impressed and striated toolmarks, in at least two items, are conducted to determine if patterns of similarity exist. At the completion of these comparisons, one of the following three opinions is issued: 1) Source Exclusion: Source exclusion is an Examiner's conclusion that two toolmarks did not originate from the same source. This conclusion is an Examiner's opinion that the observed difference(s) in class characteristics provides extremely strong support for the proposition that the two toolmarks came from different sources and extremely weak or no support for the proposition that the two toolmarks came from the same source. A source exclusion based on a minor difference in measured class characteristics requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two toolmarks originated from the same source. This conclusion is an Examiner's opinion that all observed class characteristics are in agreement and the quality and quantity of corresponding individual characteristics is such that the Examiner would not expect to find that same combination of individual characteristics repeated in another source. The basis for a source identification conclusion is an Examiner's opinion that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks originated from the same source and extremely weak support for the proposition that the two toolmarks originated from different sources. A source identification requires a verification and is the Examiner's opinion that the probability that the two toolmarks were made by different sources is so small that it is negligible. 3) Inconclusive: Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and/or quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two toolmarks as having originated from the same source. This conclusion is an Examiner's opinion that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification, or a lack of any observed microscopic similarity. Limitations: General Rifling Characteristics: The GRC, AFTE, and NIBIN databases contain information obtained from firearms at the FBI Laboratory and from voluntary law enforcement partners. It is not a comprehensive list of all firearms and contains no information about the numbers of each

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TABLE 3

WebCode	Additional Comments
	type of firearm present in the general population. The firearms listed in the report are typically those considered to be more common and are included at the discretion of the examiner. Pattern Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to variations in substrate, changes in tool working surfaces from wear, corrosion, subclass, damage, or the employment of unusual tool/work piece orientations, toolmark reproduction may be incomplete or insufficient, as a result it may not be possible for an examiner to reach a source conclusion. Additionally, some tool manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value. Damaged, corroded, or fragmented items may be of little or no value for comparison purposes.
TQZX3G	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. Questions regarding this report should be addressed to: [Email].
TYU6M8	1. Identification: Based on the agreement of individual characteristics observed by microscopic comparison examination. [Initials] August 21, 2024 2. The microscopic comparison examination was not performed between the bullets marked E-1 to E-5 ("Item 1", "Item 2" and "Item 4") with the bullets marked E-6 and E-7 ("Item 3" and "Item 5"), corresponding to piece 1, due to the disagreement (inconsistency) of class characteristics regarding the amount of rifling (R-6 vs. R-8). [Initials] August 21, 2024
U37AU2	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.
UBYUP2	The weapon that fired the projectiles item 3 and item 5 could be a Hi-Point model 995 rifle in 9mm Luger caliber without this type of weapon being exclusive of any other.
UD7YUB	TECHNICAL NOTES: Class characteristics are defined as measurable features of a firearm which indicate a restricted group source. They result from design features and are determined prior to manufacture of the firearm. Individual characteristics are defined as marks produced by the random imperfections or irregularities of firearm 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 are not to the absolute exclusion of all other firearms because it is not feasible to examine all possible firearms. However, observing this amount of agreement from a different source is considered extremely remote.

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TABLE 3

WebCode	Additional Comments
UXE3CT	Key for report item numbers to CTS item numbers: Report Items 1A1, 1A2, 1A3 = CTS Item 1 (3 known test fires). Report Item 1B = CTS Item 2. Report Item 1C = CTS Item 3. Report Item 1D = CTS Item 4. Report Item 1E = CTS Item 5.
V9RU92	The lands and grooves on specimens #3 and #5 were poorly defined
VEXJUF	The projectiles identified as item 3 and 5 were fired by a different firearm
VJRDU3	A single bullet classification was also conducted and reported out on items F1-A-C and F1-A-E.
W4RZN6	Methods: General Rifling Characteristics: The appropriate GRC measurements are entered in the database, which then returns a list of all firearms in the database with compatible GRCs. Pattern Examination: Toolmarks, whether they are present on evidence items or secondary evidence created in the Laboratory, undergo two stages of comparison. First, the class characteristics are examined and compared. If the class characteristics of the toolmarks are not clearly different, the examination moves to a second stage using comparative microscopy. Comparative examinations of the impressed and striated toolmarks, in at least two items, are conducted to determine if patterns of similarity exist. At the completion of these comparisons, one of the following three opinions is issued: 1) Source Exclusion: Source exclusion is an Examiner's conclusion that two toolmarks did not originate from the same source. This conclusion is an Examiner's opinion that the observed difference(s) in class characteristics provides extremely strong support for the proposition that the two toolmarks came from different sources and extremely weak or no support for the proposition that the two toolmarks came from the same source. A source exclusion based on a minor difference in measured class characteristics requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two toolmarks originated from the same source. This conclusion is an Examiner's opinion that all observed class characteristics are in agreement and the quality and quantity of corresponding individual characteristics is such that the Examiner would not expect to find that same combination of individual characteristics repeated in another source. The basis for a source identification conclusion is an Examiner's opinion that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks originated from the same source and extremely weak support for the proposition that the two toolmarks originated from different sources. A source identification requires a verification and is the Examiner's opinion that the probability that the two toolmarks were made by different sources is so small that it is negligible. 3) Inconclusive: Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and/or quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two toolmarks as having originated from the same source. This conclusion is an Examiner's opinion that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification, or a lack of any observed microscopic similarity. Limitations: General Rifling Characteristics: The GRC, AFTE, and NIBIN databases contain information obtained from firearms at the FBI Laboratory and from voluntary law enforcement partners. It is not a comprehensive list of all firearms and contains no information about the numbers of each type of firearm present in the general population. The firearms listed in the report are typically those considered to be more common and are included at the discretion of the examiner. Pattern Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to

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TABLE 3

WebCode	Additional Comments
	variations in substrate, changes in tool working surfaces from wear, corrosion, subclass, damage, or the employment of unusual tool/work piece orientations, toolmark reproduction may be incomplete or insufficient, as a result it may not be possible for an examiner to reach a source conclusion. Additionally, some tool manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value. Damaged, corroded, or fragmented items may be of little or no value for comparison purposes.
W8A6HU	Items numbered 3 and 5 are ELIMINATED with bullets identified with number 1, it is determined that they were not fired from the same firearm.
WLAYVN	Methods: Pattern Examination: Toolmarks, whether they are present on evidence items or secondary evidence created in the Laboratory, undergo two stages of comparison. First, the class characteristics are examined and compared. If the class characteristics of the toolmarks are not clearly different, the examination moves to a second stage using comparative microscopy. Comparative examinations of the impressed and striated toolmarks, in at least two items, are conducted to determine if patterns of similarity exist. At the completion of these comparisons, one of the following three opinions is issued: 1) Source Exclusion: Source exclusion is an Examiner's conclusion that two toolmarks did not originate from the same source. This conclusion is an Examiner's opinion that the observed difference(s) in class characteristics provides extremely strong support for the proposition that the two toolmarks came from different sources and extremely weak or no support for the proposition that the two toolmarks came from the same source. A source exclusion based on a minor difference in measured class characteristics requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two toolmarks originated from the same source. This conclusion is an Examiner's opinion that all observed class characteristics are in agreement and the quality and quantity of corresponding individual characteristics is such that the Examiner would not expect to find that same combination of individual characteristics repeated in another source. The basis for a source identification conclusion is an Examiner's opinion that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks originated from the same source and extremely weak support for the proposition that the two toolmarks originated from different sources. A source identification requires a verification and is the Examiner's opinion that the probability that the two toolmarks were made by different sources is so small that it is negligible. 3) Inconclusive: Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and/or quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two toolmarks as having originated from the same source. This conclusion is an Examiner's opinion that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification, or a lack of any observed microscopic similarity. Limitations: Pattern Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to variations in substrate, changes in tool working surfaces from wear, corrosion, subclass, damage, or the employment of unusual tool/work piece orientations, toolmark reproduction may be incomplete or insufficient, as a result it may not be possible for an examiner to reach a source conclusion. Additionally, some tool manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value. Damaged, corroded, or fragmented items may be of little or no value for comparison purposes.
WLCJR4	1. Identification: Based on the agreement of individual characteristics observed by

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TABLE 3

WebCode	Additional Comments
	microscopic comparison examination. [Initials] August/26/2024 2. The bullets were receive in a single item as 1, then identified as E-1, E-2, E-3, E-4, E-5, E-6 and E-7, respectively, they were received packed in separate white rectangular boxes divided into “Items” 1 (E-1 to E-3), 2 (E-4), 3 (E-5), 4 (E-6) and 5 (E-7) respectively. [Initials] August/26/2024
WQ6NHM	Items 1A-T1, 1A-T2, and 1A-T3: CTS Item 1 (3 known test shots) Item 1B: CTS Item 2 Item 1C: CTS Item 3 Item 1D: CTS Item 4 Item 1E: CTS Item 5
WYYP48	The recovered bullets questioned 3 and item 5 were fired from the same firearm.
X4A8UM	Similarities have been observed between the marks in the bullets Items 3 and 5. This observation lead to an additional examination between the marks in Item 3 and 5. The findings of this examination were viewed under the following two hypotheses: H3: The questioned bullets are fired by one firearm. H4: The questioned bullets are fired by two firearms of the same calibre and with the same class characteristics. The findings of the additional examination are extremely more probable when H3 is true than when H4 is true.
X89F7A	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.
XTALK3	The questioned bullets referenced as Item 3 an Item 5 were fired by the same weapon.
XVWBQ2	Item 3 and 5 have a possible subclass type feature observed in one LIMP. This feature showed heavy stria that run the length of the bullet bearing surface. While it is possible these marks are a result of damage to the barrel, without a suspect firearm it is not possible to rule out subclass so these marks were not used for ID.
XYWLM2	Large shoulder-like structure present in #3 and #5 with subclass type agreement.
YCWUV3	Methods: Physical and Visual Examination: Physical and visual examinations compare the observable features and class characteristics of evidence items. A conclusion of "physically consistent with" is reached if the observable features or measurable dimensions and/or design features of two items are in agreement or are "physically consistent." If these dimensions and features are clearly different, an elimination conclusion is reached. If there is a lack of observable features or measurable dimensions, the result is inconclusive. Pattern Examination: Toolmarks, whether they are present on evidence items or secondary evidence created in the Laboratory, undergo two stages of comparison. First, the class characteristics are examined and compared. If the class characteristics of the toolmarks are not clearly different, the examination moves to a second stage using comparative microscopy. Comparative examinations of the impressed and striated toolmarks, in at least two items, are conducted to determine if patterns of similarity exist. At the completion of these comparisons, one of the following three opinions is issued: 1) Source Exclusion Source exclusion is an Examiner's conclusion that two toolmarks did not originate from the same source. This conclusion is an Examiner's opinion that the observed difference(s) in class characteristics provides extremely strong support for the proposition that the two toolmarks came from different sources and extremely weak or no support for the proposition that the two toolmarks came from the same source. A source exclusion based on a minor difference in measured class characteristics

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TABLE 3

WebCode	Additional Comments
	requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two toolmarks originated from the same source. This conclusion is an Examiner's opinion that all observed class characteristics are in agreement and the quality and quantity of corresponding individual characteristics is such that the Examiner would not expect to find that same combination of individual characteristics repeated in another source. The basis for a source identification conclusion is an Examiner's opinion that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks originated from the same source and extremely weak support for the proposition that the two toolmarks originated from different sources. A source identification requires a verification and is the Examiner's opinion that the probability that the two toolmarks were made by different sources is so small that it is negligible. 3) Inconclusive: Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and/or quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two toolmarks as having originated from the same source. This conclusion is an Examiner's opinion that there is an insufficient quality and/or quantity of individual characteristics to identify or exclude. Reasons for an inconclusive conclusion include the presence of microscopic similarity that is insufficient to form the conclusion of source identification, or a lack of any observed microscopic similarity. Limitations: Physical and Visual Examination: A Physical and Visual examination is unsuitable for determining a source identification conclusion. A conclusion of "physically consistent with" signifies a restricted group source, based on class characteristics and/or observable features, from which evidence may have originated. Post-manufacture features cannot be used for elimination purposes. Pattern Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to variations in substrate, changes in tool working surfaces from wear, corrosion, subclass, damage, or the employment of unusual tool/work piece orientations, toolmark reproduction may be incomplete or insufficient, as a result it may not be possible for an examiner to reach a source conclusion. Additionally, some tool manufacturing methods routinely produce working surfaces that leave limited microscopic marks of value. Damaged, corroded, or fragmented items may be of little or no value for comparison purposes.
YGVWCP	The remaining bullets, “ITEMS 3” and “ITEM 5” were eliminated as having been discharged from the suspect firearm (ITEM 1). Although there were minor areas between “ITEM 3” and “ITEM 5” with some good matching striae visible, the remainder of the bullets had little to no matching striae present and could not be identified as coming from the same (second) firearm.
YJXRVR	A possible index was found in a land impression between items 3 and 5 but could not find sufficient agreement of individual characteristics in the corresponding land and groove impressions. The bearing surfaces of items 3 and 5 indicated a difference in engagement or insufficient reproducibility. Without a firearm to generate additional test fires, I was not willing to offer an opinion of identification or elimination.
YKRP2D	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

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TABLE 3

WebCode	Additional Comments
	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.
ZBGMFD	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.
ZT2BP8	Items 3 and 5 were rifled 8R. Research showed that these bullets may have been fired from a 9mm 'Hi Point' SLP. These guns are not manufactured to the highest quality and may exhibit sub class characteristics due to manufacturing processes. For this reason, it could not be definitively confirmed that the matching marks present on bullets 3 & 5 showed that items had been fired from the same firearm - INSUFFICIENT DETAIL / INCONCLUSIVE.
ZYRLZ7	The characteristic marks on the questioned recovered bullet Item 3 to be similar to the characteristic marks on the questioned recovered bullet Item 5.

-End of Report-
(Appendix may follow)

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Collaborative Testing Services ~ Forensic Testing Program

Test No. 24-5261: Firearms Examination

DATA MUST BE SUBMITTED BY **Aug. 26, 2024, 11:59 p.m. EDT** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A WebCode: 2CQ6U3

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 bullets from a crime scene and seized a Tanfoglio Witness firearm from a suspect's possession who was apprehended later that day. Three rounds of Federal American Eagle 9mm Luger 124 grain FMJ ammunition (consistent with the bullets found at the scene) were test fired with the suspect's firearm and the bullets collected. Investigators are asking you to compare the recovered bullets 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 are marked with a scriber.

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

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

Please note: *Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*

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

3.) Additional Comments

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)