



Firearms Examination

Test No. 19-527 Summary Report



Each sample set consisted of three known expended bullets (Item 1) test-fired from a suspect weapon and four questioned expended bullets (Items 2-5). Participants were requested to examine these items and report their findings. Data were returned from 237 participants and are compiled into the following tables:

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

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

Manufacturer's Information

Each sample set contained five items: Item 1 consisted of three bullets fired in the suspect's firearm. Items 2, 3, and 4 each consisted of one bullet recovered from the scene and Item 5 consisted of one bullet recovered from the victim. Remington® Arms Company 9mm Luger 115 grain Full Metal Jacket (FMJ) was used for Items 1, 4, and 5 and Remington® UMC® 9mm Luger 115 grain FMJ centerfire ammunition was used for Items 2 and 3. Participants were requested to determine which, if any, of the recovered questioned bullets (Items 2-5) were fired from the same firearm as the known bullets (Item 1).

The bullets in Item 1 and 5 were fired in a SCCY CPX-2 9mm handgun (Serial Number 167214). Items 2 and 3 were fired in a SCCY CPX-2 9mm handgun (Serial Number 169979). Item 4 was fired in a Smith & Wesson M&P 9mm handgun (Serial Number HMZ4399)

ITEMS 1, 5 (IDENTIFICATION): Multiple magazines were loaded with Remington® Arms Company 9mm ammunition for firing with the SCCY CPX-2 9mm handgun. After the ammunition was expended, the bullets were collected and packaged together as a batch. This process was repeated until the required number was produced. Out of each batch, the necessary number of bullets were selected and inscribed with a "1" (three bullets) or "5" (one bullet), then sealed into their respective boxes.

ITEMS 2, 3 (ELIMINATION): Multiple magazines were loaded with Remington® UMC® 9mm ammunition for firing with the SCCY CPX-2 9mm handgun, different from what was used to fire Items 1 & 5. After the ammunition was expended, the bullets were collected. This process was repeated until the required number was produced. Out of each batch, the necessary number of bullets were selected and inscribed with a "2" (one bullet) or "3" (one bullet), then sealed into their respective boxes.

ITEM 4 (ELIMINATION): Multiple magazines were loaded with Remington® Arms Company 9mm ammunition for firing with the Smith & Wesson M&P Shield 9mm handgun. After the ammunition was expended, the bullets were collected. This process was repeated until the required number was produced. Out of each batch, the necessary number of bullets were selected and inscribed with a "4" (one bullet) then sealed into their respective boxes.

SAMPLE SET ASSEMBLY: For each sample set, Items 2 and 3 of the same elimination batch, an Item 4, along with Items 1 and 5 of the same association batch were placed in a sample pack box. This process was repeated until all of the sample sets were prepared. Once verification was completed, the sample packs were sealed with evidence tape and initialed "CTS."

VERIFICATION: During test production, 10% of the bullets from each batch were selected and intercompared to confirm that markings were consistent. All three predistribution laboratories reported the expected responses.

Summary Comments

This test was designed to allow participants to assess their proficiency in a comparison of expended bullets. Participants were provided with 4 questioned expended bullets (Items 2-5), which they were requested to compare with 3 known expended bullets (Item 1) that were fired in the suspect's weapon, a SCCY CPX-2 handgun. Item 1 contained three Remington® Arms Company 9mm Luger 115 grain FMJ bullets. Items 4 and 5 were Remington® Arms Company 9mm Luger 115 grain FMJ bullets. Items 2 and 3 were Remington® UMC® 9mm Luger 115 grain FMJ bullets. For each sample set, the Item 5 bullet was fired in the same firearm as the Item 1 known bullets. The Item 4 bullet was fired in a different firearm from that which discharged the Item 1 and Item 5 bullets. Item 2 and Item 3 bullets were fired in a third firearm, different from the one that discharged the Item 1 and Item 5 bullets and the firearm that discharged the Item 4 bullet. (Refer to Manufacturer's Information for preparation details.)

In Table 1 Response Summary, 231 of 237 responding participants (97%) identified Item 5 and either eliminated or were inconclusive for Items 2, 3, and 4 as having been fired from the same firearm as the Item 1 bullets. Five participants identified Items 2, 3, and 5 and eliminated Item 4 as having been fired from the same firearm as the Item 1 bullets, and one participant eliminated Items 2, 3, 4 and 5 as having been fired in the same firearm as the Item 1 bullets.

CTS is aware that many labs will not, as a matter of policy, report an elimination without access to the firearm or when class characteristics match. Thus, responses of Inconclusive are not indicated as outliers for Elimination items.

Examination Results

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

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
26262T	No	No	No	Yes	4ZV3RP	No	No	No	Yes
27CYXT	No	No	No	Yes	66PGWQ	Inc	Inc	No	Yes
2ABBTT	No	No	No	Yes	69QR2J	No	No	No	Yes
2CKCW6	No	No	No	Yes	6C3VRL	No	No	No	Yes
2CXZ2D	No	No	No	Yes	6GMHQZ	Inc	Inc	No	Yes
2EQWP8	Inc	Inc	No	Yes	6K6MWB	No	No	No	Yes
2PB3PW	No	No	No	Yes	6MDT66	No	No	No	Yes
2YUJ9Q	No	No	No	Yes	6PFVNE	No	No	No	Yes
32WY2E	No	No	No	Yes	7BT9U8	No	No	No	Yes
3FFKNT	No	No	No	Yes	7M74HJ	No	No	No	Yes
3FTTEM	No	No	No	Yes	7Z9UVB	No	No	No	Yes
3K7WG4	Inc	Inc	No	Yes	83QFYH	No	No	No	Yes
3N7EAP	No	No	No	Yes	89GQ9G	No	No	No	Yes
3PQRFF	Inc	Inc	No	Yes	8EBHPQ	No	No	No	Yes
462TPB	No	No	No	Yes	8NU2ZA	No	No	No	Yes
4KMEYF	No	No	No	Yes	8TM2E6	No	No	No	No
4MVYUQ	No	No	No	Yes	8TM2GQ	No	No	No	Yes
4PJY6K	No	No	No	Yes					

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
8VFY34	No	No	No	Yes	B3MQQQ	No	No	No	Yes
8XKHUK	No	No	No	Yes	BBEMJE	No	No	No	Yes
8YEAX4	No	No	No	Yes	BJ7TYE	No	No	No	Yes
8ZNF3R	No	No	No	Yes	BRZ9YY	No	No	No	Yes
8ZP7DG	No	No	No	Yes	BTLBX7	No	No	No	Yes
99DKBJ	Inc	Inc	No	Yes	BV6JRY	No	No	No	Yes
9A99MM	No	No	No	Yes	C7FA7U	Inc	Inc	No	Yes
9BHRGC	No	No	No	Yes	C8BWKJ	No	No	No	Yes
9DTVL3	No	No	No	Yes	CC737V	No	No	No	Yes
9E4VKH	No	No	No	Yes	CFMTM6	No	No	No	Yes
9L4DZU	Inc	Inc	No	Yes	CGYN9W	No	No	No	Yes
9PMCB4	Inc	Inc	No	Yes	CHRLEH	No	No	No	Yes
AAQC4Z	No	No	No	Yes	CLUEF9	No	No	No	Yes
AB7HWW	No	No	No	Yes	CUJ8KD	No	No	No	Yes
ACRMQM	No	No	No	Yes	CX6UJR	No	No	No	Yes
AL3PCN	No	No	No	Yes	CXZ8MU	No	No	No	Yes
AUWU7P	No	No	No	Yes	CYHL93	Inc	Inc	No	Yes
AV2MVH	No	No	No	Yes	DCM7H8	No	No	No	Yes
AYNY3Z	No	No	No	Yes	DCZTMF	Inc	Inc	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
DHPDNA	No	No	No	Yes	EZFFQB	No	No	No	Yes
DJH29Q	No	No	No	Yes	F2PBY2	No	No	No	Yes
DNA9QY	No	No	No	Yes	F4GAFK	No	No	No	Yes
DPP8TH	No	No	No	Yes	F69ABB	No	No	No	Yes
DUFH3G	Yes	Yes	No	Yes	F6BXXG	Inc	Inc	No	Yes
DUHW62	Inc	Inc	No	Yes	FH24YK	No	No	No	Yes
E2GEJD	No	No	No	Yes	FKMBC8	No	No	No	Yes
E2TFYK	No	No	No	Yes	FPZAPL	Inc	Inc	No	Yes
E3U7DF	No	No	No	Yes	FXYHMZ	No	No	No	Yes
E8ZG8N	No	No	No	Yes	FYQR4V	No	No	No	Yes
EDX847	No	No	No	Yes	G9BLUH	No	No	No	Yes
EJV3LC	No	No	No	Yes	G9V3BK	Inc	Inc	No	Yes
EKC86B	Inc	Inc	No	Yes	GBBUYR	No	No	No	Yes
EN9YBM	No	No	No	Yes	GBJKHX	No	No	No	Yes
ENMWBK	No	No	No	Yes	GETBHR	No	No	No	Yes
ER7RDD	No	No	No	Yes	GEVQJC	No	No	No	Yes
ERAWMZ	No	No	No	Yes	GJNQYR	Inc	Inc	No	Yes
EUZ7TV	No	No	No	Yes	GRF7LB	No	No	No	Yes
EV7ZHM	No	No	No	Yes	GU763U	No	No	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
GVZTLQ	No	No	No	Yes	KB24ED	No	No	No	Yes
H6QZQ2	No	No	No	Yes	KEF9Y9	Yes	Yes	No	Yes
HEDR8Y	No	No	No	Yes	KNR8TK	Inc	Inc	No	Yes
HGHYFD	Inc	Inc	No	Yes	L3MA3H	No	No	No	Yes
HM6AJM	Inc	Inc	No	Yes	LAL4T3	No	No	No	Yes
HNFAH3	No	No	No	Yes	LAR9FT	No	No	No	Yes
HPA8M3	No	No	No	Yes	LEJKA4	No	No	No	Yes
HZ9CMB	No	No	No	Yes	LEK9W9	No	No	No	Yes
J3FBTH	No	No	Inc	Yes	LG9Q6L	No	No	No	Yes
J4M6HA	Yes	Yes	No	Yes	LGQQV6	No	No	No	Yes
J9KA9E	No	No	No	Yes	LKKW6Z	No	No	No	Yes
JC4AKN	No	No	No	Yes	LNJ92Z	No	No	No	Yes
JGQ2NB	No	No	No	Yes	LPLWN7	No	No	No	Yes
JMLRBY	No	No	No	Yes	LTEXNY	No	No	No	Yes
JT9VPV	No	No	No	Yes	LUR7GE	No	No	No	Yes
JYWCH9	No	No	No	Yes	LV7W4H	Inc	Inc	No	Yes
JZPANU	No	No	No	Yes	M4FMY9	Inc	Inc	No	Yes
K8L378	Yes	Yes	No	Yes	MJ9CYC	No	No	No	Yes
K9VHL8	No	No	No	Yes	MN3TE7	No	No	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
MPB7V8	No	No	No	Yes	QGENBZ	No	No	No	Yes
MURR2E	No	No	No	Yes	QJXMLA	No	No	No	Yes
MX69Y4	No	No	No	Yes	QKPVC6	No	No	No	Yes
MZ4GYU	No	No	No	Yes	QL8PCF	No	No	No	Yes
N988NA	Inc	Inc	No	Yes	QQEFDZ	No	No	No	Yes
N9FZ34	No	No	No	Yes	QXYV9D	Inc	Inc	No	Yes
NAEQ7H	No	No	No	Yes	QYCUUT	No	No	No	Yes
NUBYXN	No	No	No	Yes	QZLXBX	No	No	No	Yes
NVHC9A	No	No	No	Yes	R2CKZ7	No	No	No	Yes
NVHGVJ	No	No	No	Yes	R2Q8CT	No	No	No	Yes
NYK79Z	No	No	No	Yes	R2RVYY	No	No	No	Yes
NZAQN6	No	No	No	Yes	R8HNZZ	Yes	Yes	No	Yes
PEE4ZM	No	No	No	Yes	REF2TU	No	No	No	Yes
PGQAZ3	No	No	No	Yes	RG829D	No	No	No	Yes
PHRXN8	Inc	Inc	No	Yes	RUAEL4	No	No	No	Yes
PP9HNY	No	No	No	Yes	RXZEZR	No	No	No	Yes
Q3P6HC	No	No	No	Yes	T329XR	No	No	No	Yes
Q8M8HQ	No	No	No	Yes	T76Z8T	No	No	No	Yes
QC2UMG	No	No	No	Yes	T7YXBT	No	No	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
TA2QD6	No	No	No	Yes	WE4Y9P	No	No	No	Yes
TC39EZ	No	No	No	Yes	WG87F4	No	No	No	Yes
TEWMV4	No	No	No	Yes	WJGLXN	No	No	No	Yes
TGZTK6	Inc	Inc	No	Yes	WQJRTJ	No	No	No	Yes
TNMYGW	No	No	No	Yes	X8LQKT	No	No	No	Yes
TR7XR7	No	No	No	Yes	X9EKDG	No	No	No	Yes
UM3JHL	No	No	No	Yes	XCQQEV	No	No	No	Yes
UMMHEK	No	No	No	Yes	XKNFWK	No	No	No	Yes
UT8N6Y	Inc	Inc	No	Yes	XNLT2X	No	No	No	Yes
UU694E	No	No	No	Yes	XNY2TR	No	No	No	Yes
VB8TC9	No	No	No	Yes	XTFU2Q	No	No	No	Yes
VCZT8X	No	No	No	Yes	XUU2KM	No	No	No	Yes
VP7WHK	No	No	No	Yes	XWZQJP	No	No	No	Yes
VYX9UZ	No	No	No	Yes	XXXRV9	Inc	Inc	No	Yes
VZL4KA	Inc	Inc	No	Yes	XZ2MCQ	No	No	No	Yes
VZLV3U	No	No	No	Yes	Y6EVAE	No	No	No	Yes
VZMLDJ	Inc	Inc	No	Yes	Y9P2BT	No	No	No	Yes
W9EXVD	No	No	No	Yes	YR3NXM	No	No	No	Yes
WB4NEB	Inc	Inc	No	Yes	YV4KQ3	Inc	Inc	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
Z3F786	Inc	Inc	No	Yes					
Z7G6KH	No	No	No	Yes					
ZAGFGH	No	No	No	Yes					
ZCLKW8	No	No	No	Yes					
ZEMNNU	Inc	Inc	No	Yes					
ZGWYXW	No	No	No	Yes					
ZHQP3Q	No	No	No	Yes					
ZNJUVU	No	No	No	Yes					
ZNKHHZ	No	No	No	Yes					
ZTDLAJ	No	No	No	Yes					
ZVHD9B	No	No	No	Yes					
ZZD2YQ	No	No	No	Yes					

Response SummaryParticipants: **237**

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

Responses		Item 2	Item 3	Item 4	Item 5
	Yes		5 (2.1%)	5 (2.1%)	0 (0.0%)
No		198 (83.5%)	198 (83.5%)	236 (99.6%)	1 (0.4%)
Inc		34 (14.3%)	34 (14.3%)	1 (0.4%)	0 (0.0%)

Conclusions

TABLE 2

WebCode	Conclusions
26262T	MICROSCOPIC COMPARISONS BETWEEN EVIDENCE BULLET SPECIMENS ITEM 2 THROUGH ITEM 5 (Q1B THROUGH Q4B), AND THE TEST FIRED BULLET SPECIMENS FROM THE RECOVERED SCCY CPX-2, 9MM LUGER, FIREARM ITEM 1 (K1), REVEALS THAT SUFFICIENT AGREEMENT OF INDIVIDUAL CHARACTERISTICS EXISTS TO IDENTIFY THE FOLLOWING: ITEM 5 (Q4B) WAS FIRED WITH SCCY FIREARM ITEM 1 (K1). ITEM 2 (Q1B) AND ITEM 3 (Q2B), WERE FIRED WITH THE SAME UNKNOWN FIREARM (FIREARM A). ITEM 2 (Q1B) AND ITEM 3 (Q2B) WERE NOT FIRED WITH SCCY FIREARM ITEM 1 (K1), DUE TO THE DIFFERENT INDIVIDUAL CHARACTERISTIC MARKINGS PRESENT BETWEEN ITEM 2 (Q1B) AND ITEM 3 (Q2B) AGAINST THE TEST FIRED BULLETS FROM ITEM 1 FIREARM (K1). ITEM 4 (Q3B) WAS FIRED WITH A SECOND UNKNOWN FIREARM. ITEM 4 (Q3B) WAS NOT FIRED WITH SCCY FIREARM ITEM 1 (K1), OR WITH THE SAME UNKNOWN FIREARM AS ITEM 2 (Q1B) AND ITEM 3 (Q2B), DUE TO DIFFERENT GENERAL RIFLING CHARACTERISTICS (ITEM 4 GRC= 05R VERSUS ITEM'S 1, 2, 3, AND 5 GRC= 07R)
27CYXT	Bullets identified as item 2, item 3 and item 4, have not been fired by the SCCY gun type firearm, CPX-2 model, 9mm caliber (according with CTS information). Their class characteristics indicate that they were fired using 9mm caliber pistols. Bullet identified as item 5, have been fired by the SCCY gun type firearm, CPX-2 model, 9mm caliber (according with CTS information).
2ABBTT	The SCCY CPX-2 9mm handgun (submitted as Item 1) did not fire the bullets recovered "from the road at the scene" (submitted as Item 2 and 3), and also, did not fire the bullet recovered "from the sidewalk" (submitted as Item 4). The SCCY CPX-2 9mm handgun (submitted as Item 1) fired the bullet recovered "from the victim" (submitted as Item 5). The bullets recovered "from the road at the scene" (submitted as Item 2 and 3) were fired by the same weapon; that weapon, did not fire the bullet recovered "from the sidewalk" (submitted as Item 4).
2CKCW6	CONCLUSION: 1) Within the limits of practical certainty Item 5 was identified as having been fired in the same firearm as the known bullets of Item 1. 2) Item 2, 3 & 4 were eliminated as having been fired in the same firearm as the known bullets of Item 1. 3) Within the limits of practical certainty Item 2 & 3 were identified as having been fired in the same firearm. 4) Item 4 was eliminated as having been fired in the same firearm as Item 2 & 3.
2CXZ2D	SUBMISSIONS 2 and 3: The projectiles were identified to the same unknown firearm. SUBMISSION 4: The projectile was eliminated from the submission 1 firearm, and the unknown firearm that fired submissions 2 and 3 projectiles. SUBMISSION 5: The projectile was identified to the submission 1 firearm. NOTES: 1. Only those items discussed above were examined for this report. 2. All items of evidence submitted for analysis will be returned to [Laboratory] Evidence Unit, unless otherwise noted. 3. All firearms were visually examined and test fired unless otherwise noted. 4. The method of testing for ammunition components included visual examination and microscopic comparisons. 5. The test results for the above listed items fall into one of the four conclusions listed below: a. 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. b. Inconclusive: Could not be Identified or Eliminated. Due to possible changes in firearm operating surfaces from wear, corrosion, and ordinary fouling and differences in ammunition, cartridge cases and projectiles fired in the same firearm are sometimes not identifiable as such. c. Eliminated: Significant disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from that same firearm. d. No Value/Unsuitable for Microscopic comparison: The item lacks individual characteristics

TABLE 2

WebCode	Conclusions
	for microscopic comparison. This might also include items that did not come from ammunition or ammunition components. 6. When applicable, all NIBIN correlations and leads were viewed and/or generated by the ATF correlation center.
2EQWP8	The Items 01-02 and 01-03 bullets were identified as having been fired from the same firearm as one another. The Items 01-02 and 01-03 bullets were unable to be identified or eliminated as having been fired from the same firearm as the Items 01-01 and 01-05 bullets due to a lack of reproducible marks. The Item 01-04 bullet was eliminated as having been fired from the same firearm(s) as the Items 01-01, 01-02, 01-03, and 01-05 bullets. The Item 01-04 bullet was fired from an unknown 38 caliber class firearm with five conventionally rifled lands and grooves with a right hand twist. Calibers within the 38 caliber class include, but are not limited to, 9mm Luger, 357 Sig, 38 Special, and 357 Magnum. Possible manufacturers of the firearm that could have fired this bullet include, but are not limited to, Fabrique Nationale, Ruger, Smith & Wesson, and Taurus. The Item 01-05 bullet was identified as having been fired from the same firearm as the Item 01-01 bullets.
2PB3PW	Item 1 consists of three (3) fired .38/9 class caliber copper-jacketed bullets, Remington brand, that were submitted as known (test fire) samples. Item 5 is one (1) fired .38/9 class caliber copper-jacketed bullet that was microscopically compared to the Item 1 (test fires) and identified as having been fired from the Item 1 firearm. Items 2 and 3 are two (2) fired .38/9 class caliber copper-jacketed bullets that were microscopically compared to each other and identified as having been fired from the same firearm, not the Item 1 firearm or from the firearm that fired the Item 4 bullet. Item 4 is one (1) fired .38/9 class caliber copper-jacketed that was microscopically compared to Items 1/5 and Items 2/3 groups and eliminated as having been fired from either of those groups due to difference in class characteristics.
2YUJ9Q	The test fired bullet (Item 1.1 TF1) and the fired bullet (Item 5) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, the bullet (Item 5) is identified as having been fired from the SCCY pistol (Item 1). The test fired bullet (Item 1.1 TF1) and the fired bullets (Items 2 & 3) were microscopically examined and compared. Based on the observed disagreement of their individual characteristics, the bullets (Items 2 & 3) are eliminated as having been fired from the SCCY pistol (Item 1). The test fired bullet (Item 1.1 TF1) and the fired bullet (Item 4) were microscopically examined and compared. Based on the observed disagreement of their class characteristics, the bullet (Item 4) is eliminated as having been fired from the SCCY pistol (Item 1). The fired bullets (Items 2 & 3) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, the bullets are identified as having been fired from the same firearm.
32WY2E	1.Projectile D (Item 5) was fired in the submitted 9mm SCCY pistol, model CPX-2, serial number unknown (Item 1). 2.Projectile A (Item 2) and projectile B (Item 3) were fired in a second 9mm pistol with similar class characteristics as the submitted 9mm SCCY pistol, model CPX-2. 3.Projectile C (Item 4) was fired in a third 9mm pistol, suspect weapons include S&W pistols; however, any suspect weapon should be submitted to the laboratory for analysis.
3FFKNT	Examinations showed that Item 5 was discharged from the same firearm as Item 1. Examinations showed Items 2, 3, and 4 were not discharged from the same firearm as Item 1.
3FTTEM	The bullet of item 05 was fired by the suspect's weapon; The bullet of item 04 was fired by a second weapon (unknown); The bullets of item 02 and 03 were fired by a third weapon (unknown).
3K7WG4	Items 2 to 5 each consisted of one fired bullet in 9mm caliber. Microscopic examination on the

TABLE 2

WebCode	Conclusions
	fired bullets in Items 1 to 5 showed that (a) It was inconclusive on whether Item 2 or Item 3 was fired from the firearm that had fired Item 1; (b) Item 4 was not fired from the firearm that had fired Item 1; (c) Item 5 was fired from the same firearm that had fired Item 1.
3N7EAP	The two questioned bullets identified as ITEM 2 and ITEM 3 recovered from the road at the scene, and the questioned bullet identified as ITEM 4 recovered from the sidewalk were not fired by the seized handgun from the suspect's vehicle. The bullet recovered by the medical examiner from the victim identified as ITEM 5 was fired by the handgun SCCY CPX-2 9mm, seized from the suspect's vehicle.
3PQRFF	Laboratory Items #2 and #3 two spent full metal jacket bullets, are identified as being fired by the same firearm. Laboratory Items #2 and #3 two spent full metal jacket bullets, are inconclusive as being fired by the same firearm as Laboratory Item #1 three spent full metal jacket bullets. An inconclusive finding resulted from agreement of all discernible class characteristics, and some disagreement of individual characteristics, but insufficient for an elimination. Laboratory Item #4 one spent full metal jacket bullet, is eliminated as being fired by the same firearm as Laboratory Items #1, 2, 3 and 5 six spent full metal jacket bullets. Laboratory Item #5 one spent full metal jacket bullet, is identified as being fired by the same firearm as Laboratory Item #1 three spent full metal jacket bullets.
462TPB	Bullet Analysis: Methodology: Physical (Visual Examination), Electronic Balance/Digital Caliper/Digital Micrometer, Microscopy (Comparison Microscope). Items 1, 2, 3, 4, and 5 are 38 caliber class bullets based upon the diameter. Item 5, the bullet, was fired through the barrel of Item 1, the SCCY pistol, based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the bullets, were not fired through the barrel of Item 1, the SCCY pistol, based upon different individual microscopic characteristics. Item 4, the bullet, was not fired through the barrel of Item 1, the SCCY pistol, based upon different class characteristics. Items 2, 3, and 5, the bullets, were not fired through the barrel of the same firearm as Item 4, the bullet, based upon different class characteristics. Opinion/Interpretation: Items 1, 2, 3, 4, and 5 are consistent with bullets loaded in 9mm Luger caliber cartridges based upon the weight and style. Items 2 and 3 exhibit characteristics found in (but not limited to) the following firearms: SCCY Industries (SKYY) 9mm Luger caliber firearms. Item 4 exhibits characteristics found in (but not limited to) the following firearms: Ruger, and Smith & Wesson 9mm Luger caliber firearms.
4KMEYF	Item A1-4: Item A1-4 is not consistent in class characteristics with Item A1-1 knowns and could not have been fired in the same firearm as the Item A1-1 bullets. Item A1-1 was compared to item A1-5. Items A1-1 and A1-5, each a 9mm caliber bullet, were identified as having been fired from the same firearm, no firearm was submitted. Item A1-1 was compared to items A1-2 and A1-3. Due to a difference in individual characteristics, the Items A1-2 and A1-3 bullets were eliminated as having been fired from the same firearm as the Item A1-1 bullets. No firearm was submitted. Identifications are based on sufficient agreement of the individual characteristics of tool marks. Sufficient agreement, in part, means that the likelihood of another tool producing the same marks is so remote that it is considered a practical impossibility.
4MVYUQ	The Item 5 projectile was fired from the same firearm which fired the Item 1 test fired projectiles. The Item 2 and Item 3 projectiles were fired from the same firearm. The Item 4 projectile was not fired from the firearm which fired the Item 1 test fired projectiles. The Item 4 projectile was not fired from the same firearm which fired the Item 2 and Item 3 projectiles.
4PJY6K	1. Exhibit 1 are test fires from a 9mm Luger SCCY CPX-9mm pistol. 2. Exhibits 2, 3, and 5 are .38 caliber class fired projectiles normally loaded in a 9mm Luger cartridge with seven land

TABLE 2

WebCode	Conclusions
	and seven groove impressions with a right hand twist. 3. Exhibit 4 is a .38 caliber class fired projectile normally loaded in a 9mm Luger cartridge with five land and five groove impressions with a right hand twist. 4. Exhibit 4 was eliminated from being fired in the same firearm as Exhibits 1, 2, 3, and 5 due to the difference of class characteristics. 5. Exhibits 1, 2, 3, and 4 were microscopically compared. a. Exhibit 1 and Exhibit 5 were fired from the same firearm based on sufficient agreement of class and individual characteristics. b. Exhibit 2 and Exhibit 3 were fired from the same firearm based on sufficient agreement of class and individual characteristics; however, they were fired from a different firearm from Exhibits 1 and 5 based on agreement of class characteristics and sufficient disagreement of individual characteristics.
4ZV3RP	Item 5 bullet recovered from the victim was fired as the Item 1 bullets. Item 2, 3, 4 bullets were different from the firearm used to fire Item 1 bullets.
66PGWQ	Item 5 was fired from Item 1 based on corresponding discernable class and individual characteristics (Identification). Item 4 was not fired from Item 1 and Item 5, nor in the same unknown firearm as Items 2 and 3, based on different class characteristics (Elimination).
69QR2J	1. The bullet marked from E-1 to E-3, corresponding in Item 1 and the bullet marked E-7, corresponding in Item 5, are 9mm caliber, with right striation (R -7) and were fired by the same firearm (Identification). 2. The bullet marked E-4, corresponding in Item 2 and the bullet marked E-5, corresponding in Item 3, are 9mm caliber, with right striation (R-7) and were fired by the same firearm (Identification). 3. The bullet marked E-6, corresponding in Item 4, is 9mm caliber, with right striation (R-5) and was fired by a firearm, was not fired by the firearm used to fire the bullets marked from E-1 to E-3, corresponding in Item 1 and the bullet marked E-7, corresponding in Item 5; and was not fired by the firearm used to fire the bullet marked E-4, corresponding in Item 2 and the bullet marked E-5, corresponding Item 3.
6C3VRL	The Items 2-5 fired bullets and test fires (Item 1) from the recovered firearm were examined and microscopically compared to each other with the following results: Item 5 was identified as having been fired from the same firearm as the Item 1 test fires. Items 2 and 3 were eliminated as having been fired from the firearm used to create the Item 1 test fires based on disagreement of individual characteristics. Items 2 and 3 were identified as having been fired from a second unknown firearm. Item 4 was eliminated as having been fired from the firearm used to create the Item 1 test fires or the second unknown firearm used to fire Items 2 and 3 based on disagreement of class characteristics. Item 4 was fired from a third unknown firearm.
6GMHQZ	Items 2, and 3 have physical and design characteristics consistent with being .38/.357/9mm caliber. 9mm Luger semiautomatic pistols that could have fired them include the following: SCCY Industries, SKYY Industries. 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. Item 4 has physical and design characteristics consistent with being .38/.357/9mm caliber. Common 9mm Luger firearms that could have fired it include the following: Fabrique Nationale semiautomatic pistols, Smith & Wesson semiautomatic 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. Item 5 has physical and design characteristics consistent with being .38/.357/9mm caliber. Item 1 (the test fired bullets) and Item 5 were microscopically examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, Item 5 was identified as having been fired from the same firearm that fired Item 1 (the SCCY semiautomatic pistol). Items 2 and 3 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 1 (the test fired bullets), 2, 3, and 5 were microscopically examined and compared. Agreement of class characteristics was observed. However, there is insufficient

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	agreement or disagreement of individual characteristics to either identify or eliminate Items 2 and 3 as having been fired from the same firearm that fired Items 1 (the SCCY semiautomatic pistol) and 5. Items 2, 3, 4, 5 and Item 1 (the test fired bullets) were microscopically examined. Based on observed disagreement of class characteristics, Item 4 was eliminated as having been fired from the same firearm(s) that fired Items 2, 3, 1 (the SCCY semiautomatic pistol), and 5.
6K6MWB	The Item 1 test fired bullets and 5 bullet were identified, within the limits of practical certainty ¹ , as having been fired from the same firearm. The Item 2 and 3 bullets were identified, within the limits of practical certainty ¹ , as having been fired from the same firearm. The Item 4 bullet was not fired from the same firearm that generated the Item 1 test fired bullets or the same firearm that fired Items 2 and 3. Three (3) firearms are represented by the submitted items.
6MDT66	I microscopically compared Item 001-5 to one of the test fired bullets in Item 001-1. I observed agreement of all discernible class characteristics and sufficient agreement of individual characteristics to conclude that Item 001-5 was fired in the same firearm that produced the test fires in Item 001-1. I microscopically compared Item 001-2 and 001-3 to one of the test fired bullets in Item 001-1. I observed agreement of all discernible class characteristics and sufficient disagreement of individual characteristics to conclude that Item 001-2 and 001-3 were not fired in the same firearm that produced the test fires in Item 001-1. I visually compared Item 001-4 to one of the test fired bullets in Item 001-1. I observed a difference in the number of lands and grooves; therefore, Item 001-4 was not fired in the same firearm that produced the test fires in Item 001-1. I microscopically compared Item 001-2 to Item 001-3. I observed agreement of all discernible class characteristics and sufficient agreement of individual characteristics to conclude that Item 001-2 and Item 001-3 were fired in the same unknown firearm.
6PFVNE	Items 2 through 5 (1.2-1.5) have been examined and compared microscopically with the test fired bullets, Item 1 (1.1). Based on the observed agreement of their class characteristics and sufficient agreement of individual characteristics, Item 5 (1.5) is identified as having been fired from the same firearm as the tests, Item 1 (1.1). Based on a difference of individual characteristics Items 2 (1.2) and 3 (1.3) were not fired from the suspect firearm (1.1). However, based on the observed agreement of their class characteristics and sufficient agreement of individual characteristics, Items 2 (1.2) and 3 (1.3) are identified as having been fired from the same firearm but not the same as Items 1 (1.1 Tests) and 5 (1.5). Based on the observed difference in class characteristics Item 1.4 was not fired from the same firearm as Item 1 (1.1) and Item 5 (1.5) or Items 2 (1.2) and Item 3 (1.3).
7BT9U8	a microscopic comparison was performed on the submitted bullets 2,3,4 and 5 with the test fired bullets 1. There was sufficient firing detail, consisting of general rifling form and fine detail within to indicate that bullet 5 had been fired from the same weapon as bullets 1. The firing detail present on Bullets 2, 3 and 4 indicated that they had not been fired in the same gun as bullets 1. Bullets 2 and 3 have a similar rifling form as bullets 1 but it is likely they have been fired in two different guns. Bullet 4 has a completely different rifling form and therefore fired in another weapon. In conclusion it is likely that four different weapons have been discharged at the scene with only bullet 5 matching that of the weapon recovered.
7M74HJ	#5 Identified to test fires. #2 and #3 Identified to each other/Elimination to test fires. #4 Elimination to test fires, #2, #3, and #5.
7Z9UVB	Comparison microscope examinations were conducted and based on agreement of class characteristics and sufficient correspondence of individual characteristics , it is the finding of this examiner that submissions 001-002 and 001-003 were fired in the same firearm. Comparison microscope examinations were conducted between submissions 001-002,

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	<p>001-003 and 001-001 and based on differences in individual characteristics, it is the finding of this examiner that submissions 001-002 and 001-003 were not fired in the SCCY CPX-2 9mm handgun (test fires in submission 001-001). Suspect weapons include 9mm Luger SCCY pistols; however, any suspect weapon should be submitted to the laboratory for analysis. Submission 001-004 was examined and based on differences in class characteristics, submission 001-004 was not fired in the same firearm as submissions 001-002 and 001-003. Additionally, based on differences in class characteristics, submission 001-004 was not fired in the SCCY CPX-2 9mm handgun (test fires in submission 001-001). Suspect weapons include 9mm Luger Fabrique Nationale, Ruger, and Smith & Wesson pistols; however, any suspect weapon should be submitted to the laboratory for analysis. Comparison microscope examinations were conducted and based on agreement of class characteristics and sufficient correspondence of individual characteristics, it is the finding of this examiner that submission 001-005 was fired in the SCCY CPX-2 9mm handgun (test fires in submission 001-001). This evidence is being returned to your agency for storage.</p>
83QFYH	<p>The Item 1 test fires and the Item 5 fired bullet were examined and microscopically compared to each other with the following results: Item 1 and 5 were identified as having been fired from the same firearm. The Item 2 fired bullet and the Item 3 fired bullet were examined and microscopically compared to each other with the following results: Items 2 and 3 were identified as having been fired from a second unknown firearm. The Item 4 fired bullet was examined and was eliminated as having been fired from the same firearms as 1, 2, 3 and 5 based on differences in class characteristics.</p>
89GQ9G	<p>Item 5 was fired in the same firearm as the item 1 testfires. Items 2 and 3 were fired in a second firearm. Items 2 and 3 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: SCCY, SCCY Industries, SKYY Industries. Item 4 was fired in a third firearm. Item 4 is consistent with a bullet from ammunition designated 9mm Luger. A list of makes of firearms that may have fired this item includes, but is not limited to: Fabrique Nationale, Ruger, Smith & Wesson.</p>
8EBHPQ	<p>The fired bullets in Submission #1a and Submission #1e were microscopically compared and identified as having been fired from the same firearm based on sufficient agreement in individual characteristics present to conclude an identification. The fired bullets in Submission #1b and Submission #1c were microscopically compared and identified as having been fired from the same firearm based on sufficient agreement in individual characteristics present to conclude an identification. The fired bullets in Submissions #1a and #1e and Submissions #1b and #1c were microscopically compared and eliminated as having been fired from the same unknown firearm based on sufficient difference in individual characteristics present. The fired bullet in Submission #1d was microscopically compared and eliminated as having been fired from the same firearm that fired Submissions #1a, #1b, #1c and #1e based on differences in class characteristics present.</p>
8NU2ZA	<p>Proficiency Test 19-527, Participant Code- [Participant Code], Web Code- 8NU2ZA. The following findings reflect the professional opinion of the examiner authoring this report. Examination of Item 1 revealed three (3) test fired, 9mm caliber, full metal jacket bullets with seven (7) lands and grooves, and a right-hand twist, reportedly recovered from a SCCY semi-automatic pistol. Examination of the one (1) fired full metal jacket bullet (Item 5) revealed it is 9mm caliber and fired through a firearm barrel rifled with seven (7) lands and grooves with a right-hand twist. Examination of Item 5 with the test fired bullets reportedly recovered from the SCCY semi-automatic pistol (Item 1) revealed Item 5 was fired through the barrel of the SCCY semi-automatic pistol. Examination of the two (2) fired full metal jacket bullets (Items 2 & 3) revealed they are 9mm caliber and fired through a firearm barrel rifled with seven (7) lands</p>

TABLE 2

WebCode	Conclusions
	and grooves with a right-hand twist. Microscopic examination of Items 2 & 3 revealed they were fired through the same firearm barrel. It should be noted examination of Items 2 & 3 with the test fired bullets reportedly recovered from the SCCY semi-automatic pistol (Item 1) revealed Items 2 & 3 were not fired through the barrel of the SCCY semi-automatic pistol, due to differences in individual characteristics. Examination of the one (1) fired full metal jacket bullet (Item 4) revealed it is 9mm caliber and fired through a firearm barrel rifled with five (5) lands and grooves with a right-hand twist. It should be noted examination of Item 4 revealed it was not fired through the same firearm barrel as Items 1, 2, 3, & 5 due to differences in class characteristics.
8TM2E6	Items 2, 3, 4 and 5 were not fired from the same firearm as item 1.
8TM2GQ	Items 1 were fired from the same firearm A as item 5.
8VY34	Items 2 and 3 were identified as having been fired from the same unknown firearm. Items 2 and 3 were neither fired from the same firearm as Items 1 and 5 nor Item 4. Items 2 and 3 are 9mm/38 caliber bullets which were fired from a firearm having seven lands and grooves with a right-hand twist. Item 4 was eliminated as having been fired from the same firearm as Items 1 and 5 or Items 2 and 3. Item 4 is a 9mm/38 caliber bullet which was fired from a firearm having five lands and grooves with a right-hand twist. A list of firearms having the characteristics of Items 2 and 3 and a list for the characteristics of Item 4 is available upon request. It should be noted that these lists do not necessarily contain all firearms having the observed characteristics.
8XKHUK	Item 1 - Three test fired bullets using recovered firearm (known). Item 2 - One fired bullet. Item 3 - One fired bullet. Item 4 - One fired bullet. Item 5 - One fired bullet. The submitted specimens marked as Items 2, 3, and 5 were examined and identified as three (3) fired 9mm Luger caliber bullets exhibiting seven (7) land and groove impressions with a right twist. The submitted specimen marked as Item 4 was examined and identified as a fired 9mm Luger caliber bullet exhibiting five (5) land and groove impressions with a right twist. Items 2, 3, and 5 were microscopically inter-compared and compared to Item 1 test fires. As a result, Item 5 was identified as having been fired from the same firearm as Item 1. Items 2 and 3 were identified as having been fired from the same firearm but eliminated as having been fired from the same firearm as Items 1 and 5. Item 4 was eliminated as having been fired from the same firearms as Items 1 and 5 and Items 2 and 3. Firearms that produced similar rifling characteristics as those exhibited on Item 4 include, but are not limited to: 9mm Luger caliber firearms marketed by Fabrique Nationale, Ruger, and Smith & Wesson. Firearms that produce similar rifling characteristics as those exhibited on Items 2 and 3 include but are not limited to: 9mm Luger caliber firearms marketed by SCCY, SCCY Industries, and SKYY Industries.
8YEAX4	The Item 5 bullet was microscopically compared to the Item 1 bullets with POSITIVE RESULTS. The Item 5 bullet was fired through the same firearm barrel as the Item 1 bullets. The Item 2 and Item 3 bullets were microscopically compared to one another with POSITIVE RESULTS. The Item 2 and Item 3 bullets were fired through the same firearm barrel. The Item 2 and Item 3 bullets were microscopically compared to the Item 1 bullets with NEGATIVE RESULTS. The Item 2 and Item 3 bullets were not fired through the same firearm barrel as the Item 1 bullets. The Item 2 and Item 3 bullets are .38 caliber class bullets fired through a conventionally rifled barrel with seven lands and seven grooves with a right twist. They are most consistent with the bullet component of 9mm Luger caliber cartridges. A manufacturer that markets firearms with similar general rifling characteristics is SCCY or SKYY Industries. However, any firearm recovered in the course of this investigation should be submitted to [Laboratory] for comparison examinations. Based on differences in class characteristics, the Item 4 bullet was ELIMINATED as having been fired through the same firearm barrel as the Item 1 and Item 5 bullets and the

TABLE 2

WebCode	Conclusions
	<p>Item 2 and Item 3 bullets. The Item 4 bullet is a .38 caliber class bullet fired through a conventionally rifled barrel with five lands and five grooves with a right twist. It is most consistent with the bullet component of a 9mm Luger caliber cartridge. Some manufacturers that market firearms with similar general rifling characteristics include, but are not limited to, Fabrique Nationale, IMI, Ruger, and Smith & Wesson. However, any firearm recovered in the course of this investigation should be submitted to [Laboratory] for comparison examinations. Per [Laboratory] Case Management Guidelines, bullets are not entered into the NIBIN database.</p>
8ZNF3R	<p>EVIDENCE RECEIVED: ITEM #1 (THREE (3) TEST SPECIMENS FROM A 9MM LUG. CAL. SCCY, MODEL CPX-2 PISTOL) 03-9MM DEFORMED COPPER-JACKET BULLETS, 7R. 19-385 N-1A, N-1B, N-1C. ITEM #2: 01-9MM DEFORMED COPPER-JACKET BULLET, 7R. 19-385 N-2. ITEM #3: 01-9MM DEFORMED COPPER-JACKET BULLET, 7R. 19-385 N-3. ITEM #4: 01-9MM DEFORMED COPPER-JACKET BULLET, 5R. 19-385 N-4. ITEM #5: 01-9MM DEFORMED COPPER-JACKET BULLET, 7R. 19-385 N-5. MICROSCOPIC EXAMINATION: THE ABOVE LISTED EVIDENCE (ITEMS #2, #3, #4, #5) WERE EXAMINED AND COMPARED TO EACH OTHER AND TO THE TEST SPECIMENS FROM ITEM #1 WITH THE FOLLOWING RESULTS. IDENTIFICATION: ITEM #5 WAS MICROSCOPICALLY EXAMINED AND COMPARED TO THE ABOVE LISTED ITEMS. BASED ON THE OBSERVED AGREEMENT OF THEIR CLASS CHARACTERISTICS AND SUFFICIENT AGREEMENT OF THEIR INDIVIDUAL CHARACTERISTICS, ITEM #5 IS IDENTIFIED AS HAVING BEEN FIRED FROM ITEM #1. IDENTIFICATION: ITEMS #2 AND #3 WERE MICROSCOPICALLY EXAMINED AND COMPARED TO THE ABOVE LISTED ITEMS. BASED ON THE OBSERVED AGREEMENT OF THEIR CLASS CHARACTERISTICS AND SUFFICIENT AGREEMENT OF THEIR INDIVIDUAL CHARACTERISTICS, ITEMS #2 AND #3 ARE IDENTIFIED AS HAVING BEEN FIRED FROM ANOTHER FIREARM, DIFFERENT THAN ITEM #5. ELIMINATION: ITEM #4 WAS MICROSCOPICALLY EXAMINED AND COMPARED TO THE ABOVE LISTED ITEMS. BASED ON THE OBSERVED DISAGREEMENT OF CLASS AND INDIVIDUAL CHARACTERISTICS, ITEM #4 WAS ELIMINATED AS HAVING BEEN FIRED FROM ITEM #1 AND THE FIREARM THAT FIRED ITEMS #2 AND ITEM #3.</p>
8ZP7DG	<p>Items 1.2, 1.3, and 1.5 shared the same class characteristics as Item 1.1 (knowns) and are consistent with 9mm luger bullets, exhibiting 7 land and groove impressions with a right hand direction of twist. Item 1.5 was identified as having been fired from the same firearm as Item 1.1 (knowns). Items 1.2 and 1.3 were eliminated as having been fired from the same firearm as Item 1.1 (knowns). However, these items were identified as having been fired from the same unknown firearm. A list of firearms that could have fired these bullets was generated using the AFTE General Rifling Characteristics Database. The report is attached to this report as [Laboratory] GRC Report 1. Item 1.4 is consistent with a 9mm luger bullet and exhibited 5 land and groove impressions with a right hand direction of twist. Due to differences in class characteristics to Item 1.1 (knowns), Item 1.4 was eliminated as having been fired from the same firearm as the knowns. A list of firearms that could have fired this bullet was generated using the AFTE General Rifling Characteristics Database. The report is attached to this report as [Laboratory] GRC Report 2. [Attachments not provided by participant]</p>
99DKBJ	<p>Microscopic comparison of Exhibits 1 through 5 determined the following: Exhibit 5 was identified with the Exhibit 1 bullets as having been fired from the same firearm. Exhibits 2 and 3 were identified as having been fired from the same firearm. Although similar in all discernible class characteristics, Exhibits 2 and 3 could not be identified or excluded as having been fired from the firearm that fired Exhibit 5 and the Exhibit 1 bullets based on the insufficient correspondence of individual characteristics. Exhibit 4 was excluded as having been fired from</p>

TABLE 2

WebCode	Conclusions
	the firearm(s) that fired the Exhibit 1, 2, 3 and 5 bullets based on differences in class characteristics.
9A99MM	Item 1 and Item 5 were microscopically examined and identified as having been fired from the same firearm based on the agreement of the combination of individual characteristics and all discernible class characteristics. Item 2 and Item 3 were microscopically examined and identified as having been fired from the same firearm based on the agreement of the combination of individual characteristics and all discernible class characteristics. Item 4 was eliminated as having been fired from the same firearm as as Item 1, 2, 3 and 5 due to disagreement of class characteristics. Item 2 and Item 3 were eliminated as having been fired from the same firearm as Item 1 and Item 5 due to disagreement of individual characteristics. The conclusions in this report are the opinion of the undersigned examiner. When a conclusion is verified it is also the opinion of the verifier.
9BHRGC	The submitted bullets were examined and all were determined to be fired full metal jacketed bullets. The bullets test fired from the 9mm Luger caliber SCCY CPX-2 handgun (Item 1) and the questioned bullets, Items 2, 3, and 5, had seven land and groove impressions with a right-hand twist. Questioned bullet Item 4 had five land and groove impressions with a right-hand twist. Questioned bullets Items 2, 3, and 5 were microscopically compared to the test-fired bullets (Item 1) from the suspected SCCY handgun. Questioned Item 5 was identified as having been fired from the SCCY handgun based on sufficient agreement of individual characteristics in the rifling impressions. Items 2 and 3 were eliminated as having been fired from the suspected SCCY handgun based on a lack of sufficient agreement of striae in the rifling impressions, which was unlike the copious agreement observed between the test-fired bullets (Item 1) and the level of agreement observed between Items 2 and 3. Representative digital images were taken. Item 4 was eliminated as having been fired from the suspected SCCY handgun based on differences in rifling characteristics.
9DTVL3	Following a detailed examination of both class and individual rifling characteristics, I am satisfied that the bullet from the victim (Item 5) was discharged from the suspect firearm (Item 1). I am also satisfied that the first and second bullets recovered from the road (Items 2 and 3) were discharged from the same gun as each other, but this was a different gun from Item 1. The bullet from the sidewalk (Item 4) exhibited different class characteristics and was discharged from a third gun.
9E4VKH	The submitted specimens marked as Items 2, 3, and 5 were examined and identified as three (3) fired 9mm Luger caliber jacketed bullets exhibiting seven (7) land and groove impressions with a right twist. The submitted specimen marked as Item 4 was examined and identified as one (1) fired 9mm Luger caliber jacketed bullet exhibiting five (5) land and groove impressions with a right twist. Items 2 through 5 were microscopically inter-compared and compared to Item 1 sample bullets. As a result of microscopic examination, it was concluded that Item 5 was identified as having been fired from the same firearm that fired Item 1 sample bullets. Items 2 and 3 were identified as having been fired from the same unknown firearm. Items 2 and 3 were eliminated as having been fired from the same firearm that fired Item 1 sample bullets and Item 5 due to differences in individual characteristics. Item 4 was eliminated as having been fired from the same firearm that fired Item 1 sample bullets and Item 5 or Items 2 and 3 due to differences in class characteristics. Firearms that produce similar rifling characteristics as those exhibited on Items 2 and 3 include, but are not limited to: 9mm Luger caliber semi-automatic pistols marketed by SCCY, SCCY Industries, and Skyy Industries. Firearms that produce similar rifling characteristics as those exhibited on Item 4 include, but are not limited to: 9mm Luger caliber semi-automatic pistols marketed by Fabrique Nationale and Smith & Wesson; and 9mm Luger caliber revolvers marketed by Ruger and Smith & Wesson.

TABLE 2

WebCode	Conclusions
9L4DZU	The bullets in Items 2, 3, 4, and 5 were microscopically examined in conjunction with one another and the test fired bullets in Item 1. Based on these comparative examinations, it was determined that: A. Due to sufficient agreement of class and individual characteristics, the bullet in Item 5 had been fired in the same firearm as the bullets in Item 1. B. Due to sufficient agreement of class and individual characteristics, the bullets in Items 2 and 3 had been fired in the same firearm as one another. These bullets bear similar class and individual characteristics as the bullets in Items 1 and 5; however, these similarities are insufficient for a conclusive determination. C. Due to a difference in class characteristics, the bullet in Item 4 had not been fired in the same firearms as Items 1, 2, 3, or 5.
9PMCB4	Item 1 bullets (from recovered firearm) and Item 5 bullet were fired by the SCCY CPX-2 9mm Luger caliber recovered handgun. Items 2 and 3 bullets were fired by one firearm. These bullets are consistent with bullets commonly found loaded in some 9mm Luger caliber cartridges. Items 2 and 3 can neither be identified nor eliminated as having been fired by the firearm that fired Items 1 and 5 based on a lack of agreeing individual characteristics; however, available class characteristics and some individual characteristics are similar. See the attachment for a list of possible firearm manufacturers/origins that may have fired these projectiles. Note that this list may not be all inclusive. Item 4 bullet was not fired by the same firearm(s) that fired Items 1, 2, 3 and 5. This bullet is consistent with bullets commonly found loaded in some 9mm Luger caliber cartridges. See the attachment for a list of possible firearm manufacturers/origins that may have fired this projectile. Note that this list may not be all inclusive. [Attachment not provided by participant]
AAQC4Z	Items 2, 3, and 5 are three fired copper jacketed bullets determined to be of 9mm caliber displaying rifling characteristics of seven lands and grooves, right twist. Item 4 is a fired copper jacketed bullet determined to be of 9mm caliber displaying rifling characteristics of five lands and grooves, right twist. Based on weight, physical dimensions and design, the likely caliber of these bullets is 9mm Luger. Microscopic examination of the bullets indicates that three firearms were used. Item 5 was compared to the Item 1 test fires. These bullets have the same class of rifling and sufficient corresponding individual microscopic marks to conclude that Item 5 was fired from the same firearm as Item 1 (firearm #1). Items 2 and 3 were compared to each other and these bullets have the same class of rifling and sufficient corresponding individual microscopic marks to conclude that they were fired in a single firearm (firearm #2). Manufacturers of firearms that could have fired Items 2 and 3 include but may not be limited to SCCY Industries. Item 2 was then compared to the Item 1 test fires. These bullets have similar class marks but significant differences in individual marks. In the absence of alteration, Items 2 and 3 were not fired in the same firearm as Item 1. Item 4 was compared to Items 1, 2, 3 and 5 and significant differences in rifling class marks were found. Item 4 was fired in a different firearm (firearm #3) than Items 1, 2, 3 and 5. Manufacturers of firearms that could have fired Item 4 include but may not be limited to Fabrique Nationale, Ruger, and Smith & Wesson.
AB7HWW	I undertook a microscopic comparison of the Items 1 to 5 and found the following: A. Item 5 (questioned) was fired in the same firearm which fired the fired bullets received in Item 1 (known). B. Item 2 (questioned) and Item 3 (questioned) were both fired from second firearm, other than that which fired the fired bullets received in Item 1 (known) and Item 5 (questioned). C. Item 4 (questioned) was fired from a third firearm, other than that which fired Item 1 (known), Item 2 (questioned), Item 3 (questioned) and Item 5 (questioned).
ACRMQM	Comparative examinations of Item 5 (a bullet) against Item 1 (a bullet said to have been fired in a SCCY Model CPX-2 9mm Luger caliber pistol) showed the presence of matching features. This indicates that Items 1 and 5 were fired in the same firearm. Comparative examination of Item 4 (a bullet) against Item 1 revealed different class characteristics (rifling pattern). This

TABLE 2

WebCode	Conclusions
	means that Items 1 and 4 were fired in different firearms. Comparative examinations of Item 2 (a bullet) against Item 3 (a bullet) showed the presence of matching features. This indicates that Item 2 and 3 are consistent with having been fired in the same firearm. Comparative examinations of Items 2 and 3 against Item 1 showed the presence of different features. This indicates that the firearm used to fire Item 1, in its present condition, did not fire Items 2 or 3.
AL3PCN	Item 2, 3 and 4 are eliminated from being fired in the firearm that fired items 1 and 5. Item 4 is eliminated from being fired in the firearms that fired items 1, 2, 3 and 5. Items 2 and 3 are identified as being fired in the same unknown firearm. Item 5 is identified as being fired in the firearm that fired item 1.
AUWU7P	Three firearms were involved in this shooting. The murder weapon was the one seized (shot item 5). Item 2 and 3 were shot by a second firearm. Item 4 was shot by a third firearm.
AV2MVH	1. The submitted item bullet #1 was compared to the submitted item bullet #2 and was eliminated as having been fired in the same pistol. 2. The submitted item bullet #1 was compared to the submitted item bullet #3 and was eliminated as having been fired in the same pistol. 3. The submitted item bullet #1 was compared to the submitted item bullet #4 and was eliminated as having been fired in the same pistol. 4. The submitted item bullet #1 was compared to the submitted item bullet #5 and was identified as having been fired in the same pistol. 5. The submitted bullets #2 and #3 were compared to each other and identified as having been fired in the same unknown pistol. (not the test fires)
AYNY3Z	On the examination and comparison, I found: (i) The characteristic marks on the questioned bullet recovered from the victim (Item 5) to be similar to the characteristic marks on the known bullets fired using the recovered firearm (Item 1). (ii) The characteristic marks on the questioned bullet (Item 2, Item 3 and Item 4) were dissimilar to the the characteristic marks on the known bullets (Item 1). Hence, I am of the opinion that the: (i) Question bullet recovered from the victim (Item 5) was fired by recovered weapon. (ii) Question bullets (Item 2, Item 3 and Item 4) were not fired by recovered weapon.
B3MQQQ	Item 5 was fired in the same firearm as Item 1. Items 2, 3, and 4 were not fired in the same firearm as Items 1 and 5. Items 2 and 3 were fired in the same firearm. Item 4 was not fired in the same firearm as Items 2 and 3.
BBEMJE	Once performed the procedure of microscopic comparison among the three bullets marked as one with the four bullets marked as two, three, four and five, received as incriminated determining that there are three groups of bullets conformed as follows: GROUP ONE: Conformed of bullets marked as one and the bullet marked as five, which have characteristics of identity in their grooves and lands, with which it can be determined that they were fired by the SCCY CPX-2 pistol firearm. GROUP TWO: Conformed by the bullet marked as two and the bullet marked as three, which have characteristics of identity in their stretch marks and lands, with which it can be determined that they were fired by the same firearm, but different from the one that fired the projectiles of group one. GROUP THREE: Conformed by the bullet marked as four, which has five grooves and five lands, which establishes that it does not have the same characteristics as the other bullets, for which it is established that it was fired by a firearm different to the one that fired the two previous groups.
BJ7TYE	item 1 and item 5 were identified to be from the same firearm. item 2 and item 3 were identified to firearm was submitted. however,ho known.
BRZ9YY	Bullet Item (5) (which recover from the victim body) was firing from the pistol which found from the suspect.
BTLBX7	I found sufficient agreement of individual marks between Item 1 (known) and Item 5

TABLE 2

WebCode	Conclusions
	<p>(questioned) to conclude that Item 5 was fired by Item 1 SCCY CPX-2 pistol. Item 4 has different rifling class marks to bullets from Item 1 SCCY CPX-2 pistol. Pistol did not fire Item 4. I found sufficient agreement of individual marks between Item 2 (questioned) and Item 3 (questioned) to conclude that they were fired by a single firearm. The individual marks on Items 2 and 3 were different to the marks found on Item 1 and Item 5. Items 2 and 3 were fired by a firearm that is not Item 1.</p>
BV6JRY	<p>Item 5 was a nominal .38 caliber bullet with a copper full metal jacket and fired through a barrel with conventional right twist rifling of seven lands and grooves. Its design and weight is consistent with bullets commonly loaded in 9mm Luger cartridges. Item 5 was compared to the SCCY CPX-2 test-fired bullets (Items 1A, 1B, and 1C) using a comparison microscope. Corresponding class characteristics and individual detail sufficient for an identification were observed. Item 5 was fired by the SCCY CPX-2 pistol. Items 2 and 3 were nominal .38 caliber bullets with copper full metal jackets and fired through a barrel or barrels with conventional right twist rifling of seven lands and grooves. Their design and weight are consistent with bullets commonly loaded in 9mm Luger cartridges. The two bullets were intercompared using a comparison microscope. Corresponding class characteristics and individual detail sufficient for an identification were observed. Items 2 and 3 were fired by the same firearm. Items 2 and 3 were compared to the SCCY CPX-2 test-fired bullets (Items 1A, 1B, and 1C) and to Item 5 using a comparison microscope. Class characteristics corresponded; however, significant differences of individual detail was observed to conclude that Items 2 and 3 were not fired by the SCCY CPX-2 pistol. Item 4 was a nominal .38 caliber bullet with a copper full metal jacket and fired through a barrel with conventional right twist rifling of five lands and grooves. Its design and weight is consistent with bullets commonly loaded in 9mm Luger cartridges. Item 4 was not fired by the SCCY CPX-2 pistol nor by the same firearm as Items 2 and 3 due to differences of class characteristics (rifling).</p>
C7FA7U	<p>One of the bullets (Item 01-05) was fired by the "SCCY CPX-2 9mm handgun". Two of the bullets (Items 01-02 and 01-03) were fired by a single firearm; the firearm was not eliminated as being the "SCCY CPX-2 9mm handgun" due to the agreement of all discernible class characteristics and disagreement of individual details, but insufficient for an elimination. The result is inconclusive. One of the bullets (Item 01-04) was fired by a firearm with five lands and grooves and a right twist. The bullet was eliminated as having been fired by the "SCCY CPX-2 9mm handgun" and/or same firearm as the two bullets (Items 01-02 and 01-03) due to differences in general rifling characteristics (GRC).</p>
C8BWKJ	<p>MICROSCOPIC COMPARISON EXAMINATIONS OF THE EVIDENCE BULLETS ITEM 2 THROUGH ITEM 5 AND THE TEST FIRED BULLETS ITEM 1 FROM SCCY CPX-2 9MM LUGER PISTOL K1 REVEALED SUFFICIENT AGREEMENT OF INDIVIDUAL CHARACTERISTICS EXISTS TO IDENTIFY THE FOLLOWING: THE EVIDENCE BULLET ITEM 5 WAS FIRED WITH THE SCCY 9MM LUGER PISTOL K1. THE EVIDENCE BULLETS ITEM 2 AND ITEM 3 CAN BE ELIMINATED AS HAVING BEEN FIRED WITH THE SCCY 9MM LUGER PISTOL K1 DUE TO DIFFERENCES IN INDIVIDUAL CHARACTERISTICS IN THE RIFLING MARKS. THE EVIDENCE BULLET ITEM 4 CAN BE ELIMINATED AS HAVING BEEN FIRED WITH THE SCCY 9MM LUGER PISTOL K1 DUE TO DIFFERENCES IN THE NUMBER OF LAND AND GROOVE IMPRESSIONS (ITEM 4=5; K1=7). THE EVIDENCE BULLETS ITEM 2 AND ITEM 3 WERE FIRED WITH THE SAME UNKNOWN FIREARM (FIREARM A). THEY BEAR CLASS CHARACTERISTICS MOST COMMON TO SKYY/SCCY FIREARMS. THE EVIDENCE BULLET ITEM 4 WAS FIRED WITH A SECOND UNKNOWN FIREARM (FIREARM B). ITEM 4 HAS MARKS OF VALUE AND IS SUITABLE FOR FUTURE MICROSCOPIC COMPARISONS. SHOULD ANY OTHER SUSPECT FIREARM(S) BE RECOVERED PLEASE SUBMIT AND REFERENCE THE ABOVE CC#. Sufficient</p>

TABLE 2

WebCode	Conclusions
CC737V	<p>agreement is related to the significant duplication of random toolmarks as evidenced by a pattern or combination of patterns of surface contours. "Sufficient agreement" exists between two toolmarks means that the agreement is of a quantity and quality that the likelihood another tool could have made the mark is so remote as to be considered a practical impossibility.</p> <p>ITEM 5 ITEM 1 İLE İRTİBATLI. ITEM 2 İLE ITEM 3 KENDİ ARASINDA İRTİBATLI. ITEM 1 İLE TUTMAZ. ITEM 4 İRTİBATI YOK (BAĞIMSIZ). [Requested translation was not provided by time of publication]</p>
CFMTM6	<p>Items 2, 3 and 4 were not fired from the evidence firearm. Items 2 and 3 were fired from the same firearm. On the item 5 class characteristics match and the individual characteristics are distinctive. Item 5 was fired from the evidence firearm.</p>
CGYN9W	<p>I microscopically compared the fired bullets, Items 001-2 through 001-5, to each other and to test fired bullets reportedly fired from an SCCY CPX-2 9mm Luger caliber pistol. I observed agreement of all discernible class characteristics with sufficient agreement of individual characteristics to conclude Item 001-5 was fired from the pistol reportedly used to produce the test fired bullets, Item 001-1. I observed agreement of all discernible class characteristics with sufficient agreement of individual characteristics to conclude Items 001-2 and 001-3 were fired by a single firearm; however, I observed significant disagreement of individual characteristics and concluded they were not fired from the pistol reportedly used to produce the test fired bullets, Item 001-1. I observed significant disagreement of class characteristics and I concluded Item 001-4 was not fired from the firearm that fired Items 001-2 and 001-3 or the pistol reportedly used to produce the test fired bullets, Item 001-1.</p>
CHRLEH	<p>Items 1-1-1, 1-1-2, and 1-1-3 are three 9mm caliber bullets said to have been fired from a "SCCY CPX-2 9mm handgun", and they have conventional style rifling consisting of seven lands and grooves with a right twist. These items were described in the laboratory as known standards. Items 1-2-1, 1-3-1, and 1-5-1 are three 9mm caliber bullets fired by a gun(s) having conventional style rifling consisting of seven lands and grooves with a right twist. Based on agreement of all discernible class characteristics, the items were microscopically compared to item 1-1-1 known standard. Through microscopic comparisons, the following conclusions were reached: Item 1-5-1 was identified as having been fired by the same gun that fired item 1-1-1 (known standard) based on sufficient similarities in the patterns of microscopic markings observed between the compared items. Items 1-2-1 and 1-3-1 were eliminated as having been fired by the same gun that fired item 1-1-1 based on significant differences in the patterns of microscopic markings observed among the compared items. Items 1-2-1 and 1-3-1 were identified as having been fired by the same unknown gun based on sufficient similarities in the patterns of microscopic markings observed between the compared items. A list of common firearms with the same general rifling characteristics as items 1-2-1 and 1-3-1 includes, but is not limited to, SCCY Industries firearms. Item 1-4-1 is a 9mm caliber bullet fired by a gun having conventional style rifling consisting of five lands and grooves with a right twist. Based on differences in class characteristics, it was eliminated as having been fired by the same gun that fired item 1-1-1 (known standard), and it was eliminated as having been fired by the same unknown gun that fired items 1-2-1 and 1-3-1. Item 1-4-1 is suitable for microscopic comparisons. A list of common firearms with the same general rifling characteristics as item 1-4-1 includes, but is not limited to, Smith & Wesson firearms.</p>
CLUF9	<p>See attached report. [Attachment not provided by participant]</p>
CUJ8KD	<p>The examination of the recovered fired bullet under a comparison microscope allows us to conclude that the item 5 was fired from the seize SCCY CPX-2. The examination also showed that items 2 and 3 were fired from a second firearm and item 4 was fired from a third one.</p>

TABLE 2

WebCode	Conclusions
CX6UJR	All the items(#2, #3, #4, #5) were microscopically examated to each other. Based on these comparative examinations and observed class and individual characteristics, it was determined that : Only item #5 was fired in the same firearm as the known bullets(Item #1).
CXZ8MU	Items Submitted (Sample Pack F2): Item 1: Three bullets fired using the recovered firearm (known). Item 2: First bullet recovered from the road at the scene (questioned). Item 3: Second bullet recovered from the road at the scene (questioned). Item 4: Bullet recovered from the sidewalk (questioned). Item 5: Bullet recovered from the victim (questioned). Forensic Analysis Report: Microscopic examination of (Item 1) known test fired 9mm bullets produced by SCCY CPX-2 9mm handgun (unknown serial number) was inter-compared and determined to have sufficient microscopic detail for a comparison. It was determined that (Item 1) known test fired 9mm bullets was identified as being fired out of the same SCCY CPX-2 9mm handgun (unknown serial number) and possessed conventional rifling. Microscopic examination of (Item 1) known test fired 9mm bullets were inter-compared to the questioned 9mm bullets in (Item 2), (Item 3), (Item 4), and (Item 5). It was determined that the bullets in (Item 2), (Item 3), (Item 4), and (Item 5) were the same 9mm class ammunition and possessed conventional rifling. However, (Item 2), (Item 3), and (Item 4) were not fired in the same firearm as (Item 1) known test fired bullets. Further examination disclosed that (Item 5) was identified as being fired out of the same firearm as (Item 1).
CYHL93	The projectile in Item 5 was fired in the gun that fired the projectiles in Item 1 based on agreement observed in individual characteristics. The projectile in Item 4 was not fired in the gun that fired the projectiles in Item 1 based on differences observed in class characteristics. The projectiles in Items 2 and 3 bear class characteristics consistent with the projectiles in Item 1. However, due to insufficient reproducible individual characteristics the projectiles in Items 2 and 3 could not be positively included or excluded as having been fired in the gun that fired the projectiles in Item 1 to the exclusion of all other firearms bearing the same class characteristics.
DCM7H8	The cartridge cases from Item 1 and the cartridge case from Item 5 were fired from the same firearm - Firearm #1. The cartridge case from Item 2 and the cartridge case from Item 3 were fired from the same firearm - Firearm #2. The cartridge case from Item 4 was fired from a different firearm than the other Items - Firearm #3.
DCZTMF	Macroscopic examinations and microscopic comparisons of Exhibits 1 through 5 determined the following: There is agreement of all discernible class characteristics and sufficient agreement of individual characteristics to identify Exhibit 5 as having been fired from the same firearm as the Exhibit 1 test fired bullets. An identification conclusion indicates the probability Exhibit 5 was fired from a different firearm is so small as to be considered negligible. There is agreement of all discernible class characteristics and sufficient agreement of individual characteristics to identify Exhibits 2 and 3 as having been fired from the same firearm. An identification conclusion indicates the probability Exhibits 2 and 3 were fired from different firearms is so small as to be considered negligible. Though there is agreement of all discernible class characteristics, due to insufficient agreement or disagreement of individual characteristics Exhibits 2 and 3 could neither be identified nor excluded as having been fired from the same firearm as the Exhibit 1 test fired bullets. Due to a difference in class characteristics, Exhibit 4 was excluded as having been fired from the same firearm as the Exhibit 1 test fired bullets and the firearm that fired Exhibits 2 and 3.
DHPDNA	Items 1A and 1E were identified as having been fired by the same firearm, based on the agreement of class characteristics, and individual characteristics observed in the land engraved areas. Items 1B and 1C were identified as having been fired by the same firearm, based on the agreement of class characteristics, and individual characteristics observed in the land engraved

TABLE 2

WebCode	Conclusions
	areas. Items 1A and 1B were eliminated as having been fired by the same firearm, based on the differences of individual characteristics observed in the land engraved areas. Item 1D was eliminated to Items 1A through 1C and 1E as having been fired by the same firearm, based on differences in class characteristics. The difference being the number of lands and grooves.
DJH29Q	The questioned bullet(item5) was fired from the recovered firearm as the known bullets(item1). The questioned bullets(item2,item3 and item4) were not fired from the recovered firearm. But the questioned bullets(item2 and item3) were fired from the same firearm.
DNA9QY	1. One of the recovered questioned bullets(Item 5) was identified to be fired in the same firearm as the known bullets(Item 1). 2. Three of the recovered questioned bullets(Item 2 - 4) were eliminated to be fired in the same firearm as the known bullets(Item 1). 3. Two of the recovered questioned bullets(Item 2 -3) were identified to be fired in the same firearm.
DPP8TH	1) The 9mm caliber bullet, identified as item 5, together with the three bullets identified as item 1; they have the same identity characteristics among themselves, so it is concluded that they were fired by the same firearm. 2) The two 9mm caliber bullets, identified as items 2 and 3, have the same identity characteristics among themselves, so it is concluded that they were fired by a second firearm. 3) The 9mm caliber bullet, identified as item 4, has identity characteristics, which are different from those observed in the other bullets analyzed, so it is concluded that it was fired by a third firearm.
DUFH3G	From the sample that had been received, it can be concluded that each bullet consists of 9mm Luger caliber ammunition and the rifling type for each bullet is "cut or button" which give the land and groove mark also the characteristics on the bullet for ballistic test. Three bullet in item 1 had the same characteristics and can be defined had been fired from the same gun which are SCCY CPX-2 9mm handgun that had been recovered in the crime scene. The comparison between three (3) bullet in item 1 and the bullet in item 2, 3 and 5 give the result that all bullet have same characteristics, therefore we can concluded that bullet in item 1, 2, 3 and 5 are been fired in the same firearm which are SCCY CPX-2 9mm handgun. Meanwhile, comparison between three (3)bullet in item 1 and the bullet in item 4 give the result that bullet in item 4 did not have same characteristics with each bullet in item 1, which give the information another handgun been use in the case. Therefore, from the comparison and finding, it can be conclude that 2 firearm are been used in the crime scene including the suspect firearm that had been seized.
DUHW62	The projectiles in Item 1 and the projectile in Item 5 were fired from the same gun based on agreement observed in individual characteristics. The projectile in Item 4 was not fired in the same gun that fired the projectiles in Item 1 based on differences observed in class characteristics. The projectiles in Items 2 and 3 bear class characteristics consistent with the projectiles in Item 1. Due to insufficient reproducible individual characteristics, the projectiles in Items 2 and 3 could not be positively included or excluded as having been fired in the same gun that fired the projectiles in Item 1 to the exclusion of all other firearms bearing the same class characteristics.
E2GEJD	Exhibits 2, 3 and 5 bullets were visually examined and microscopically compared to the bullets from Exhibit 1. Based on agreement of class characteristics and sufficient agreement of the individual characteristics, Exhibit 5 was identified as having been fired from the firearm that fired the Exhibit 1 bullets. Based on agreement of class characteristics and sufficient agreement of the individual characteristics, Exhibit 2 and Exhibit 3 were identified as having been fired from the same firearm, but the firearm that fired the Exhibit 1 bullets was excluded. Exhibit 4 was visually examined and compared to the bullets of Exhibit 1, 2, 3, and 5. Based on differences in class characteristics, Exhibit 4 was excluded as having been fired in neither of the

TABLE 2

WebCode	Conclusions
	above firearms.
E2TFYK	The bullets from ITEM 2 and 3 (recovered from the road) wear same general rifling characteristics as bullets fired using the recovered firearm (ITEM 1). But after examination we could say the individual characteristics are different. So bullets from ITEM 2 and 3 weren't fired in the recovered firearm (ITEM 1). Otherwise, ITEM 2 and 3 were fired in a same firearm which could be a same type of pistol as the seized one. Bullet from ITEM 4 wears different general rifling characteristics as ITEM 1 and ITEM 2 and 3. The ITEM 4 was fired in a different type of firearm than ITEM 1 and ITEM 2 and 3. Bullet from ITEM 5 wears same general rifling characteristics and individual characteristics as bullets fired in the seized pistol. ITEM 5 was fired in the SCCY CPX-2 9mm handgun seized.
E3U7DF	Comparative microscopic examination of the test fired bullets submitted in Item 1 with the bullets submitted in Items 2 through 5 revealed the following: 1. Based on sufficient agreement of class and individual characteristics, the bullet submitted in Item 5 had been fired in the same firearm as the bullets in Item 1. 2. Based on differences in class characteristics, the bullet in Item 4 was excluded from being fired in the same pistol as the bullets in Item 1, Item 2, and Item 3. 3. The bullets in Items 2 and 3 share the same class characteristics as the bullets in Item 1; however, Items 2 and 3 were excluded from being fired in the same firearm as the bullets in Item 1 based on differences in individual characteristics. Based on sufficient agreement of class and individual characteristics, Items 2 and 3 had been fired in the same unknown firearm.
E8ZG8N	1. Items 1 according to individual, microscopic and class characteristics is positive with item 5. 2. Item 1 according to individual, microscopic and class characteristics, is negative with item 4. 3. Item 1 according to individual, microscopic and class characteristics, is negative with items 2 and 3.
EDX847	The fired bullet, Item 5, was identified as having been fired from the firearm that generated the test fires, Item 1. The two fired bullets, Items 2 and 3, were identified as having been fired from a second firearm, not the firearm that generated the test fires, Item 1. Items 2 and 3, were determined to be most consistent with bullets commonly loaded in 9mm Luger caliber cartridges. Firearms manufactured with general rifling characteristics (GRC's) similar to Items 2 and 3 include, but are not limited to the following: SCCY, and SKYY Industries. It was determined that the fired bullet, Item 4, was fired from a third firearm based on a difference in GRC's from Items 1, 2, 3 and 5. Item 4 was determined to be most consistent with bullets commonly loaded in 9mm Luger caliber cartridges. Firearms manufactured with GRC's similar to Item 4 include, but are not limited to the following: Fabrique Nationale (FN), Ruger, and Smith & Wesson.
EJV3LC	Item 5 was fired from the same firearm that created test set "item 1". Items 2 and 3 match each other and were fired from a second different gun than test set 1 and are eliminated from that gun. Item 4 has different class characteristics and was fired from a third different gun than test set 1 and is eliminated from that gun. Three different guns are represented in the unknown 2, 3, 4 and 5.
EKC86B	The submitted specimens marked as Items 2, 3, and 5 were examined and identified as three (3) fired 9mm Luger caliber jacketed bullets exhibiting seven (7) land and groove impressions with a right twist. The submitted specimen marked as Item 4 was examined and identified as one (1) fired 9mm Luger caliber jacketed bullet exhibiting five (5) land and groove impressions with a right twist. Items 2 through 5 were microscopically inter-compared and compared to Item 1 sample bullets. As a result of microscopic examination, it was concluded that Item 5 was identified as having been fired from the firearm that fired Item 1 sample bullets. Items 2 and 3

TABLE 2

WebCode	Conclusions
	<p>were identified as having been fired from the same unknown firearm. Items 2 and 3 exhibit agreement of all discernible class characteristics as those exhibited by Item 1 sample bullets, but cannot be identified or eliminated as having been fired from the same firearm that fired Item 1 sample bullets, due to a lack of sufficient agreement of individual characteristics. Item 4 was eliminated as having been fired from the same firearm that fired Item 1 sample bullets and Item 5 and the firearm that fired 2 and 3 due to differences in class characteristics. Firearms that produce similar rifling characteristics as those exhibited as on Item 4 include, but are not limited to: 9mm Luger caliber semiautomatic pistols marketed by: Fabrique Nationale and Smith & Wesson, and 9mm Luger caliber revolvers marketed by: Ruger and Smith & Wesson.</p>
EN9YBM	<p>ITEM 2 AND ITEM 3 WERE DISCHARGED FROM THE SAME WEAPON, DIFFERENT OF PISTOL ITEM 1. ITEM 4 WAS DISCHARGED FROM A THIRD WEAPON</p>
ENMWBK	<p>The fired bullets submitted as items 2, 3, and 5 were microscopically compared to each other and to the said test fired bullets submitted as item 1 and it was determined that: The Item 5 was fired from the same as Item 1 (the suspect's firearm). The Items 2 and 3 were fired from a second firearm. The Item 4 was fired from a third firearm.</p>
ER7RDD	<p>[No Conclusions Reported.]</p>
ERAWMZ	<p>1. Projectile D (Item 5) was fired in the submitted 9mm SCCY pistol, model CPX-2. 2. Projectiles A and B (Items 2 and 3) were fired in a second 9mm firearm. Suspect weapons include 9mm SCCY pistols; however, any suspect weapon should be submitted to the laboratory for examination. 3. Projectile C (Item 4) was fired in a third 9mm firearm. Suspect weapons include 9mm Smith & Wesson pistols; however, any suspect weapon should be submitted to the laboratory for examination.</p>
EUZ7TV	<p>Family and individual characteristic marks on bullet Item 5 to be similar to those test fired bullets Item 1. Hence, I am of the opinion that bullet Item 5 was fired using a SCCY CPX-2 9mm handgun. Characteristic marks on bullets Item 2, Item 3 and Item 4 to be dissimilar to those test fired bullets Item 1.</p>
EV7ZHM	<p>The Item 5 it was fired by the same firearm from that of suspect's Item 1. The Items 2 and 3 were fired by the other firearm, different from that of suspect's. The Item 4 was fired by the other firearm, different from that of suspect's Item 1 and different from the firearm fired that bullets 2 and 3. There are three (3) firearms</p>
EZFFQB	<p>The bullet (item 5) was fired in the same firearm as the known bullets (item 1).</p>
F2PBY2	<p>The following findings reflect the professional opinion of the examiner authoring this report. Examination of the three (3) fired full metal jacket bullets (Item 1) revealed they are 9mm caliber and fired through a firearm barrel rifled with seven (7) lands and grooves with a right hand twist. Item 1 is reportedly test fired bullets from the recovered SCCY CPX-2 caliber semi-automatic pistol. Examination of the one (1) fired full metal jacket bullet (Item 5) revealed it is 9mm caliber and fired through a firearm barrel rifled with seven (7) lands and grooves with a right hand twist. Microscopic examination of Item 5 with Item 1 revealed Item 5 was fired through the same firearm barrel as Item 1. Examination of the two (2) fired full metal jacket bullets (Items 2 & 3) revealed they are 9mm caliber and fired through a firearm barrel rifled with seven (7) lands and grooves with a right hand twist. Microscopic examination of Items 2 & 3 revealed they were fired through the same firearm barrel. Examination of the one (1) fired full metal jacket bullet (Item 4) revealed it is 9mm caliber and fired through a firearm barrel rifled with five (5) lands and grooves with a right hand twist. Further examination of Item 4 revealed it was not fired through the same firearm barrel as either Items 1 & 5 or Items 2 & 3 due to differences in class characteristics.</p>

TABLE 2

WebCode	Conclusions
F4GAFK	I microscopically compared Items 2 and 3 to Item 1A. Items 2 and 3 can be eliminated from being fired in the same firearm as Items 1A, 1B, and 1C based on significant disagreement of individual characteristics within the land impressions. Item 4 can be eliminated from being fired in the same firearm as Items 1A, 1B, and 1C based on different class characteristics. I microscopically compared Item 5 to Item 1A. I identified Item 5 as being fired in the same firearm as Items 1A, 1B, and 1C based on sufficient agreement of individual characteristics within multiple land impressions.
F69ABB	Item 5 was identified as having been fired from Item 1 based upon sufficient agreement of individual characteristics. (LIMPS); Item 2 and Item 3 were identified as having been fired from the same unknown firearm based upon sufficient agreement of individual characteristics. (LIMPS) (Unknown firearm #1); Item 4 was eliminated as having been fired from the same firearm as either Item 1 and Item 5 or Item 2 and Item 3 due to differences in class characteristics. (# of LIMPS/GIMPS) (Unknown firearm #2)
F6BXXG	Item 2 and item 3 were fired in the same firearm. They cannot be identified or eliminated as having been fired from the recovered firearm that fired item 1 due to a lack of agreement of individual characteristics. Item 4 was not fired from any of the firearms that fired item 1, item 2 or item 3 based on differences in class characteristics. Item 5 was fired from the recovered firearm(known) that fired item 1 based on sufficient agreement of individual characteristics, land impressions.
FH24YK	The bullets Items 2, 3, 4 and 5 were compared microscopically. The Item 5 was fired from the same as Item 1 (the suspect's firearm). The Items 2 and 3 were fired from a second firearm. The Item 4 was fired from a thrid firearm different from the previous one.
FKMBC8	Item 5 was fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm. Items 2 and 3 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: SKYY Industries and SCCY. Item 4 was fired in a third firearm. Item 4 is consistent with a bullet from ammunition designated 9mm Luger. A list of makes of firearms that may have fired this item includes, but is not limited to: Smith & Wesson, Ruger and Fabrique Nationale.
FPZAPL	Test fired bullets from the firearm in Item 1 were microscopically examined in conjunction with the bullets from Items 2 through 5. Based on these comparative microscopic examinations and observed class and individual characteristics, the following was determined: 1. Based on sufficient agreement of class and individual characteristics, it was determined that the bullet in Item 5 was fired from the same firearm as test fired bullets from Item 1. 2. Based on sufficient agreement of class and individual characteristics, it was determined that the bullet in Item 2 and the bullet in Item 3 were fired from the same 9mm Luger caliber firearm. Item 2 and Item 3 had the same class characteristics as test fired bullets from Item 1, but no agreement or disagreement of individual characteristics was noted due to the insufficiency of these marks in the land impressions. The general rifling characteristics present on Item 2 and Item 3 are most commonly produced by firearms manufactured by SCCY. 3. Based on disagreement of class characteristics, it was determined that Item 4 was not fired from the same firearm as test fires in Item 1. The general rifling characteristics present on Item 4 are most commonly produced by firearms manufactured by Smith and Wesson.
FXYHMZ	1.A comparative microscopic examination between the exhibit fired bullet,(5)and the test fired bullets discharged in the exhibit firearm (1), revealed that the exhibit fired bullet,(5)had been discharged from the exhibit firearm,(1). 2.A comparative microscopic examination between the exhibit fired bullet,(2), and exhibit fired bullet,(3),revealed that they had been discharged from the same firearm but NOT from the exhibit firearm (1)that discharged the test fired bullets (1).

TABLE 2

WebCode	Conclusions
	3.A comparative microscopic examination between the exhibit fired bullet,(4), and the test fired bullets discharged in the exhibit firearm (1), revealed that the exhibit fired bullet,(4)had NOT been discharged from the exhibit firearm,(1)that discharged the test fired bullets (1).
FYQR4V	Item 001-5 was fired in the SCCY CPX-2 9mm handgun. Items 001-2 and 001-3 were fired in the same firearm, but not in the SCCY CPX-2 9mm handgun. Item 001-4 was not fired in the SCCY CPX-2 9mm handgun, nor was it fired in the same firearm responsible for firing Items 001-2 and 001-3.
G9BLUH	Items 1a, 1b, 1c and 5 were fired from the same firearm. Items 2 and 3 were fired from the same firearm. Items 1a, 1b, 1c and 5 were not fired from the same firearm as Items 2 and 3 nor were they fired from the same firearm as Item 4. Item 4 is consistent with being a 9mm Luger caliber projectile having been fired from a firearm with conventional rifling and five lands and grooves inclined to the right. A list of possible firearms would include, but not be limited to: Smith and Wesson.
G9V3BK	Test fired bullets in Item 1 were microscopically examined in conjunction with the bullets in Items 2, 3, 4, and 5. A) Based on these comparative examinations and sufficient agreement of observed class and individual characteristics, it was determined that the bullet in Item 5 had been fired in the same firearm as Item 1. B) Based on these comparative examinations and sufficient agreement of observed class and individual characteristics, it was determined that the bullets in Items 2 and 3 had both been fired in the same firearm as one another. C) Due to differences in class characteristics, the bullet in Item 4 had not been fired in the same firearm as Item 1, Item 2, Item 3, or Item 5. The rifling characteristics present on this bullet are most common to 9mm firearms manufactured by Fabrique Nationale, Ruger, Smith & Wesson and possible others. D) The bullets in Items 1 and 5 bear the same class characteristics as the bullets in Items 2 and 3; however, there are insufficient individual characteristics to link them as having been fired in the same firearm.
GBBUYR	Submissions 001-2, 001-3 and 001-5 were microscopically compared to submission 001-1 (test fires from SCCY CPX-2 pistol). Submission 001-5 was identified as having been fired in the SCCY CPX-2 pistol. Submissions 001-2 and 001-3 were eliminated as having been fired in the SCCY CPX-2 pistol due to a difference in individual characteristics. Submission 001-4 was eliminated as having been fired in the SCCY CPX-2 pistol due to a difference in class characteristics.
GBJKHX	The results extremley strongly support that the bullets Item 1 have been fired out of the same gun as the bullet Item 5. The results extremley strongly support that the bullet Item 2 and the bullet Item 3 have been fired out of the same firearm, but not the firearm that Item 1 have been fired in. No other connections have been observed.
GETBHR	a) 9 mm. one (1) (Item5) of four (4) bullet cores in diameter is used with the SCCY CPX-2 9mm handgun (Item1), b) The remaining 9 mm. three (3) bullet cores (2 (Item2, Item3) +1 (Item4)) in the form of two separate firearms that match their, Detected.
GEVQJC	1.1 and 1.5 - Tests fired bullets Items #1.1.1-1.1.3 were compared microscopically to fired bullet, Item #1.5. Based on the agreement of all discernible class characteristics and sufficient agreement of corresponding individual characteristics, Item #1.5 has been identified as having been fired in the submitted pistol Item #1.1. Comparison of these items to the Laboratory's Open Case File upon request. 1.2-1.3 - These bullets were compared microscopically to each other. Based on the agreement of all discernible class characteristics and sufficient agreement of corresponding individual characteristics, these bullets have been identified as having been fired in the same firearm. These bullets were also compared microscopically with Items #1.1 and 1.5. There is agreement of all discernible class characteristics, however based on sufficient

TABLE 2

WebCode	Conclusions
	<p>disagreement of individual characteristics, Items #1.2-1.3 have been eliminated as having been fired in the pistol Item #1.1. These bullets bears general rifling (class) characteristics of seven (7) grooves, right twist with dimensions known to be used in 38/357/9mm caliber class firearms manufactured and/or marketed by SCCY. However, since this list is not necessarily complete, any firearm that becomes suspect should be submitted to this laboratory for examination. Comparison of these items to the Laboratory's Open Case File upon request. 1.4 - This bullet bears general rifling (class) characteristics of five (5) grooves, right twist with dimensions known to be used in 38/357/9mm caliber class firearms manufactured and/or marketed by Smith & Wesson, Taurus, Ruger, Alfa, J. Thomas, Harrington & Richardson, Iver Johnson, INA, and Sportarms. However, since this list is not necessarily complete, any firearm that becomes suspect should be submitted to this laboratory for examination. This bullet was microscopically examined. It was determined to be suitable for comparison microscopically. Comparison of this item to the Laboratory's Open Case File upon request. Based on differences in class characteristics, this bullet has been eliminated as having been fired in the pistol Item #1.1 as well as the same firearm that discharged Items #1.2-1.3.</p>
GJNQYR	<p>On examination, i found the characteristic marks on Item 5 was similar with the characteristic marks on Item 1. I also found that the characteristic marks on Item 4 was not similar with Item 1. Further analysis indicated that both Item 2 and Item 3 to be inconclusive with Item 1.</p>
GRF7LB	<p>The fired bullet, Item 5, was microscopically examined and compared with the test fired bullets, Item 1. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Item 5 is identified as having been fired from the same firearm as the test fired bullets, Item 1. The fired bullet, Item 4, was microscopically examined. Based on the observed disagreement of class characteristics, Item 4 is eliminated as having been fired from the same firearm as the bullets from Item 1. The fired bullets, Items 2 and 3, were further microscopically examined and compared with one another and the test fired bullets, Item 1. There is observed agreement of their class characteristics. Based on the lack of sufficient agreement of individual characteristics, however, Items 2 and 3 were not identified as having been fired from the same firearm or from the same firearm as the bullets from Item 1.</p>
GU763U	<p>Items 1-5 were microscopically examined and inter-compared. In my opinion, item 5 is identified as being fired from the same firearm submitted as item 1, a SCCY CPx-2 9mm pistol.</p>
GVZTLQ	<p>Based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Items 1 and 5, were identified as having been fired from the same firearm. Based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Items 2 and 3, were identified as having been fired from the same firearm. Based on significant disagreement of class characteristics, the fired bullet, Item 4, could not have been fired from the same firearm as the fired bullets, Items 1 and 5, or the same firearm as the fired bullets from Items 2 and 3. Based on significant disagreement of individual detail, the fired bullets, Items 1 and 5, could not have been fired from the same firearm as the fired bullets, Items 2 and 3.</p>
H6QZQ2	<p>The test-fired bullets in Item 001 were microscopically compared to the bullets, items 002 through 005 using a comparison microscope. Based on these comparisons, it is the opinion of this examiner that the bullet, item 005 was fired in the recovered firearm. The remaining bullets, items 002 through 004 were eliminated from being fired in the recovered firearm due to either significant differences in class characteristics or individual characteristics in the land impressions. Items 002 and 003 were microscopically compared to each other using a comparison microscope. The result of this comparison was inconclusive. There was agreement of class characteristics and some agreement of individual characteristics in some of the land impressions, but insufficient for identification. In addition, item 002 and 003, were</p>

TABLE 2

WebCode	Conclusions
	<p>microscopically compared to item 004 using a comparison microscope. Based on these comparisons, both items 002 and 003 were eliminated from being fired in the same firearm as item 004. In my opinion, a total of at least three different firearms were associated with this incident.</p>
HEDR8Y	<p>Projectile D (Item 5) was fired in the suspect 9mm SCCY pistol, model CPX-2, serial number unknown, that fired projectiles labeled Item 1. Projectiles A and B (Items 2 and 3) were fired in a second 9mm firearm, based on differences in individual characteristics. Projectile C (Item 4) was fired in a third 9mm firearm, based on differences in class characteristics.</p>
HGHYFD	<p>Item 1 consists of three (3) fired bullets, reported to be fired from a 9mm Luger (9x19mm) SCCY pistol, Model CPX-2 pistol. Item 5 is a .38 caliber/9mm copper-jacketed round nose bullet. The Item 5 bullet was identified as having been fired from the same barrel as the Item 1 test-fired bullets. Item 2 and Item 3 are .38 caliber/9mm copper-jacketed round nose bullets that were fired from a barrel with seven grooves, right twist. The Item 2 bullet and Item 3 bullet were identified as having been fired from the same barrel. Due to a lack of sufficient corresponding microscopic marks of value, no conclusion could be reached as to whether the Item 2 and Item 3 bullets were fired from the same barrel as the Item 1 test-fired bullets. A check of the [Laboratory's] General Rifling Characteristics (GRC) database produced a list of handguns with GRCs like those present on the Item 2 and Item 3 bullets that includes pistols marketed by SCCY. Item 4 is a .38 caliber/9mm copper-jacketed round nose bullet that was fired from a barrel rifled with five grooves, right twist. The Item 4 bullet was excluded as having been fired from the same barrel as the Item 1 test-fires and Item 5 bullets, as well as the same barrel as the Item 2 and Item 3 bullets. A check of the GRC database produced a list of handguns with GRCs like those present on the Item 4 bullet that includes pistols marketed by Smith & Wesson and revolvers marketed by Ruger and Smith & Wesson.</p>
HM6AJM	<p>The test fired projectiles from Item 1 were compared to the evidence projectiles from Items 2 through 5. A comparison of Items 2 and 3 to the test fired projectiles from Item 1 revealed that Items 2 and 3 bear similar class characteristics to the test fired projectiles of Item 1, but did not have sufficient corresponding individual microscopic marks to allow an identification with each other. Therefore, no conclusion could be reached as to whether or not they were fired from the same firearm as the projectiles from Item 1. A comparison of Item 4 to the test fired projectiles from Item 1 revealed that the class characteristics of Item 4 were not the same as those of the test fired projectiles of Item 1. Therefore Item 4 could not have been fired in the same firearm as the projectiles from Item 1. A comparison of Item 5 to the test fired projectiles from Item 1 revealed that Item 5 bears similar class and individual characteristics to the test fired projectiles of Item 1. Based on these characteristics it was determined that Item 5 and Item 1 were fired in the same firearm.</p>
HNFAH3	<p>The fired bullet, Lab Item 5, was fired from the same firearm as test fires, Lab Item 1, based on microscopic comparison and agreement of discernible class characteristics and sufficient matching individual detail. The fired bullets, Lab Items 2 and 3, were fired from the same unknown firearm, based on microscopic comparison and agreement of discernible class characteristics and sufficient matching individual detail. The fired bullets, Lab Items 2 and 3, were not fired from the firearm as the test fires, Lab Item 1, based on microscopic comparison and significant disagreement of individual characteristics. The fired bullet, Lab Item 4, was not fired from the same firearm as test fires, Lab Item 1, nor the same unknown firearm as Lab Items 2 and 3, based on microscopic comparison and significant disagreement of class characteristics.</p>
HPA8M3	<p>None of the recovered questioned bullets Item 2 to Item 4, was fired in the same firearm as the known bullets (Item 1). The recovered questioned bullet labeled as Item 5 was fired in the same</p>

TABLE 2

WebCode	Conclusions
	firearm as the known bullets (Item1).
HZ9CMB	Microscopic Comparison made between test shot Bullets from the submitted Firearm (Item #1) and recovered Bullets Item #2, Item #3, Item #4, & Item #5 with the following results: Item #5: Identification, Fired from the submitted Firearm. Item #4: Exclusion, Fired from a different (second) Firearm. Item #3: Exclusion, Fired from a different (third) Firearm. Item #2: Exclusion, Fired from a different (third) Firearm.
J3FBTH	Item 5 fired from the recovered firearm. Item 2 and 3 fired from a second (unknown) firearm. Item 4 fired from a third (unknown) firearm.
J4M6HA	The bullets, items 3, 4 and 5, had microscopic details matching those of item hence were fired using the recovered firearm. Bullet, item 4, had been fired from a different firearm as its characteristics were different from those on the recovered firearm.
J9KA9E	The item #1A-C projectiles were determined to have been fired in the same firearm as item #5. This is based on all discernible class characteristics and sufficient agreement found in the land impressions. The item #2 projectile was determined to have been fired in the same firearm as the item #3 projectile. This is based on all discernible class characteristics and sufficient agreement found in the land impressions. The item #2 and #3 projectile were determined to have been fired in a different firearm than the item #5 and item #1A-C. This is based on a sufficient disagreement found in the land impressions, however similar class characteristics were noted. The item #4 projectile was eliminated as being fired from the items #1,2,3 and #5. This is based on a difference in class characteristics. A total of three different firearms were present.
JC4AKN	Based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets from Items 1 & 5 were identified as having been fired from the same firearm. Based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Items 2 & 3, were identified as having been fired from the same firearm. Based on significant disagreement of individual characteristics, the fired bullets from Items 1 & 5 could not have been fired from the same firearm as the fired bullets, Items 2 & 3. Based on significant disagreement of class characteristics, the fired bullet, Item 4, could not have been fired from the same firearm as the fired bullets from Items 1 & 5, or the same firearm as the fired bullets, Items 2 & 3.
JGQ2NB	The item labeled Item5 were fired by the same firearm as the know bullets Item1. The items labeled Item2, Item3 and Item4 were NO fired by the same firearm as the know bullets Item1.
JMLRBY	The bullets Items 1 and 5 were microscopically identified as having been fired from the same firearm. The bullets were determined to be of 9mm caliber displaying rifling characteristics of seven lands and grooves, right twist. The bullets Items 2 and 3 were microscopically identified as having been fired from the same firearm, however a different firearm than the firearm that fired Items 1 and 5. The bullets were determined to be of 9mm caliber displaying rifling characteristics of seven lands and grooves, right twist. Manufactures of firearms with similar rifling characteristics include, but are not limited to SCCY. The bullet Item 4 was not fired in the same firearm that fired Items 1 and 5 nor the firearm that fired Items 2 and 3. The bullet was determined to be of 9mm caliber displaying rifling characteristics of five lands and grooves, right twist. Manufactures of firearms with similar rifling characteristics include, but are not limited to Ruger and Smith and Wesson.
JT9VPV	Comparison microscope examinations were conducted on the evidence listed above. The findings of this examiner are the following: Exhibit 1 and Exhibit 5 were fired with the same firearm- 9mm Luger SCCY model CPX-2 firearm based on sufficient agreement of individual

TABLE 2

WebCode	Conclusions
	<p>characteristics present. Exhibit 2 and Exhibit 3 were fired with the same unknown firearm (Firearm #2) based on sufficient agreement of individual characteristics present. Exhibit 2 and Exhibit 3 were not fired with the same firearm as Exhibit 1 and Exhibit 5 due to differences in individual characteristics present. The following is an investigative lead only and not intended to exclude all other makes of firearms. Based on class characteristics of Exhibit 2 and Exhibit 3, the possible firearms are 9mm Luger SCCY and SKYY. Exhibit 4 was not fired with the 9mm Luger SCCY model CPX-2 firearm or the firearm that fired Exhibit 2 and Exhibit 3 due to the differences in class characteristics (Firearm #3). The following is an investigative lead only and not intended to exclude all other makes of firearms. Based on class characteristics of the submitted evidence, the possible firearms are Smith & Wesson.</p>
JYWCH9	<p>The one 38 caliber class bullet (Item 5) was fired from the same firearm as the test fired bullets (Item 1). The two 38 caliber class bullets (Items 2 and 3) were all fired from the same firearm, however, a different firearm than the test fired bullets (Item 1). The 38 caliber class bullet (Item 4) was not fired from the same firearm as any of the other submitted bullets (Items 2, 3, and 5) or the test fired bullets (Item 1).</p>
JZPANU	<p>Item 5 bullet was fired from the same 9mm Luger caliber firearm that fired the Item 1 test-fired bullets. Items 2 and 3 bullets were fired from a second 9mm Luger caliber firearm. Class characteristics present are consistent with bullets fired from some SCCY CPX series firearms. Other firearms should be considered. Item 4 bullet was fired from a third 9mm Luger caliber firearm. See the attachment for a list of possible firearm manufacturers/origins that may have fired this bullet. Other firearms should be considered as this list may not be all inclusive. [Attachment not provided by participant]</p>
K8L378	<p>From the sample that had been received, it can be concluded that each bullet consists of 9mm Luger caliber ammunition and the rifling type for each bullet is "cut or button" which give the land and groove mark also the characteristics on the bullet for ballistic test. Three bullet in item 1 had the same characteristics and can be defined had been fired from the same gun which are SCCY CPX-2 9mm handgun that had been recovered in the crime scene. The comparison between three (3) bullet in item 1 and the bullet in item 2, 3 and 5 give the result that all bullet have same characteristics, therefore we can concluded that bullet in item 1, 2, 3 and 5 are been fired in the same firearm which are SCCY CPX-2 9mm handgun. Meanwhile, comparison between three (3)bullet in item 1 and the bullet in item 4 give the result that bullet in item 4 did not have same characteristics with each bullet in item 1, which give the information another handgun been use in the case. Therefore, from the comparison and finding, it can be conclude that 2 firearm are been used in the crime scene including the suspect firearm that had been seized.</p>
K9VHL8	<p>Item 2: This bullet was not fired from the recovered firearm that was used to generate the bullets in item 1. The firing marks on these items were found to show significant differences in their detail, despite showing the same class characteristics*. Item 3: This bullet was not fired from the recovered firearm that was used to generate the bullets in item 1. The firing marks on these items were found to show significant differences in their detail, despite showing the same class characteristics*. Item 4: This bullet was not fired from the recovered firearm that was used to generate the bullets in item 1. The firing marks on these items were found to show different class characteristics. Item 5: The findings provide very strong support for the proposition that this bullet was fired from the recovered firearm that was used to generate the bullets in item 1, rather than from some other firearm. The firing marks on these items were found to show the same class characteristics and significant detailed correspondence*.</p>
KB24ED	<p>The examination of class characteristics and individual characteristics show that bullet from item 5 have been fired from the recovered firearm which sized. Bullets from items 2 and 3 have</p>

TABLE 2

WebCode	Conclusions
	<p>been fired by an other gun which having the same class characteristics as sized firearm, maybe an other SCCY CPX-2. The bullet from item 4 have been fired from an other firearm which have differents class characteristics (5 right lands mesuring about 2.5 mm) which could be an Semi-automatic pistol or revolver from Smith and Wesson.</p>
KEF9Y9	<p>From the sample that had been received, it can be concluded that each bullet consists of 9mm Luger caliber ammunition and the rifling type for each bullet is "cut or button" which give the land and groove mark also the characteristics on the bullet for ballistic test. Three bullet in item 1 had the same characteristics and can be defined had been fired from the same gun which are SCCY CPX-2 9mm handgun that had been recovered in the crime scene. The comparison between three (3) bullet in item 1 and the bullet in item 2, 3 and 5 give the result that all bullet have same characteristics, therefore we can concluded that bullet in item 1, 2, 3 and 5 are been fired in the same fiream which are SCCY CPX-2 9mm handgun. Meanwhile, comparison between three (3)bullet in item 1 and the bullet in item 4 give the result that bullet in item 4 did not have same characteristics with each bullet in item 1, which give the information another handgun been use in the case. Therefore, from the comparison and finding, it can be conclude that 2 firearm are been used in the crime scene including the suspect firearm that had been seized.</p>
KNR8TK	<p>The Item 5 bullet was identified as having been fired from the barrel of the Item 1 pistol. Item 2 and Item 3 are .38 caliber/9mm Luger full metal jacket bullets that were fired from a barrel rifled with seven grooves, right twist. The Item 2 and Item 3 bullets were identified as having been fired from the same pistol. However, due to a lack of sufficient corresponding microscopic marks of value, no conclusion could be reached as to whether the bullet was fired from the barrel of the Item 1 pistol. A check of the [Laboratory's] General Rifling Characteristics (GRC) database produced a list of pistols with GRCs like those present on the Item 2 and Item 3 bullets that includes pistols marketed by SCCY/SKYY Industries. Item 4 bullet is a .38 caliber full metal jacket bullet that was fired from a barrel rifled with five grooves, right twist. Based on a difference in class characteristics, the Item 4 bullet was excluded as having been fired from the barrel of the Item 1 pistol. A check of the [Laboratory's] General Rifling Characteristics (GRC) database produced a list of firearms with GRCs like those present on the Item 2 and Item 3 bullets that includes pistols marketed by Smith & Wesson and revolvers marketed by Smith & Wesson, Ruger and Taurus.</p>
L3MA3H	<p>The known bullets Item 1 and the questioned bullet Item 5 have the same class characteristics and matching individual characteristics, so it is undoubtedly proved, that the bullet Item 5 were fired in the same firearm as the known bullets Item 1. The known bullets Item 1 and the questioned bullets Item 2 and 3 have the same class characteristic but different individual characteristics, so it is undoubtedly proved, that the bullets Item 2 and 3 were not fired in the same firearm as the known bullets Item 1. The questioned bullets Item 2 and 3 have with each other matching individual characteristics, so it is undoubtedly proved, that these bullets were fired in the same firearm. The known bullets Item 1 and the questioned bullet Item 4 have different class characteristics, so the bullet Item 4 was not fired in the same firearm as the known bullets Item 1.</p>
LAL4T3	<p>A. The bullets described in Item 1, are 9mm caliber, with right rifling(R-7) and were fired by the same firearm the shot the bullet described in the Item 5. B. The bullets described in Items 2 and 3, are 9mm caliber with right rifling (R-7) and were fired by the same firearm. C. The bullet described in Item 4, is 9mm caliber with rifling (R-5) and was fired by a firearm. The was not shot by the same firearm the shot the bullets described in the Items: 1,2,3 and 5.</p>
LAR9FT	<p>The Item 1 firearm was identified as having fired the Item 5 bullet. The Item 2 and Item 3 bullets were identified as having been fired in the same, unknown firearm. These bullets were</p>

TABLE 2

WebCode	Conclusions
	not fired from the Item 1 firearm based on different individual characteristics. A manufacturer of firearms with similar rifling characteristics to those displayed by the Item 2 and Item 3 bullets is SCCY/SKYY. The Item 4 bullet was not fired from the Item 1 firearm or the unknown firearm that fired the Item 2 or Item 3 bullets. This is based on differences in class characteristics. Manufacturers of firearms with similar rifling characteristics to those displayed by the Item 4 bullet include, but are not limited to Ruger and Smith & Wesson. **All identifications are based on microscopic comparisons and the correspondence of individual characteristics.
LEJKA4	On the one hand, the bullet from item 5 matches with bullets from item 1, hence, this bullet from item 5 was shot in the seized handgun. On the other hand, bullets from item 2 and item 3 were fired in a same second weapon. Otherwise, the bullet from item 4 was fired in another third weapon.
LEK9W9	1. Examinations showed Item 5 was discharged from the same firearm as Item 1. 2. Examinations showed Items 2, 3, and 4 were not discharged from the same firearm as Item 1.
LG9Q6L	A comparison was conducted between the test fired bullets taken from the exhibit pistol (Item 1) against those recovered from the deceased (Item 2) and the scene (Items 3-5 inclusive). The results of the comparison were - Items 2 and 3 displayed the same general characteristics but there was no correspondence within the stria present on the land marks - Eliminated. Item 4 did not display the same general characteristics - Eliminated. Item 5 displayed the same general characteristics and strong correspondence within the stria present on the landmarks - Positive. Therefore I say that Items 2-4 inclusive were not discharged in the exhibit pistol and that Item 5 was discharged in the exhibit pistol.
LGQQV6	The following results are the opinion of this examiner: The 38 caliber class bullet (Item 5) was fired from the same firearm as the three 38 caliber class bullets (Item 1). The 38 caliber class bullets (Items 2 and 3) were fired from a second firearm. The remaining 38 caliber class bullet (Item 4) was fired from a third firearm.
LKKW6Z	Item 5 was fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm. Items 2 and 3 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: SCCY. Item 4 was fired in a third firearm. Item 4 is consistent with a bullet from ammunition designated 9mm Luger. A list of makes of firearms that may have fired this item includes, but is not limited to: S&W and Ruger.
LNJ92Z	Item 5 was fired in the same firearm as the item 1 test fires. Items 2 and 3 were fired in a second firearm. Items 2 and 3 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: SCCY Industries, SKYY Industries Item 4 was fired in a third firearm. Item 4 is consistent with a bullet from ammunition designated 9mm Luger. A list of makes of firearms that may have fired this item includes, but is not limited to: Fabrique Nationale, Ruger, Smith and Wesson.
LPLWN7	Item 5 and test fired bullet, Item 1a, are an Identification. This means Item 5 was fired from the recovered firearm (Sccy CPX-2). Items 2 & 3 are an Identification to each other but are an elimination to Item 1a from the recovered Sccy Pistol. This means Specimens QB 1 & 2 were not fired from the recovered firearm. Item 4 is an elimination to Items 1 a-c, 2-3, & 5 based on different class characteristics. This means Item 4 was not fired from the same firearm as Items 2-3, 5 or the recovered firearm.
LTEXNY	See Attached Report. [Attachment not provided by participant]
LUR7GE	Items 2, 3, 4 and 5 were microscopically compared with the Item 1 fired bullets fired using the recovered firearm, with the following conclusions: Item 5 was fired through the same gun

TABLE 2

WebCode	Conclusions
	barrel as the Item 1. Items 2 and 3 were fired through one gun barrel, but not the same barrel as the item 1. Item 4 was fired in the other gun barrel, but not the same barrel as item 1 and barrel as items 2 and 3.
LV7W4H	<p>EVIDENCE SUBMITTED: Lab Item # Agency Item # Description 1 F2 One (1) cardboard box containing: 1.1 F2 Three (3) Testfires from a SCCY model CPX-2, 9mm Luger caliber pistol. 1.2 F2 One (1) fired bullet. 1.3 F2 One (1) fired bullet. 1.4 F2 One (1) fired bullet. 1.5 F2 One (1) fired bullet. CONCLUSIONS OF ANALYSIS: The fired bullet, item 1.5, was identified as having been fired in the SCCY pistol, item 1.1. The two (2) fired bullets, items 1.2, and 1.3, were consistent in all observable class characteristics (caliber, rifling, twist, and widths and number of lands and grooves) as the SCCY pistol, item 1.1. While there is some disagreement of microscopic markings, the markings present are insufficient for an elimination. The results are inconclusive. The two (2) fired bullets, items 1.2 and 1.3, were identified as having been fired in the same firearm. The fired bullet, item 1.4 was eliminated as having been fired in the SCCY pistol, item 1.1 and the same firearm as items 1.2 and 1.3 based on a difference of class characteristics (number of lands and grooves, and widths of lands and grooves). [Participant submitted data in a format that could not be reproduced in this report]</p>
M4FMY9	<p>The submitted evidence was visually or microscopically examined, compared, and its characteristics noted. Items # 1-1, # 1-2, # 1-3, # 1-4, and # 1-5 are consistent in size, weight, and physical appearance with being .38 caliber class. The bullets are most consistent, based on size, weight, and physical appearance, with bullets loaded in 9mm Luger cartridges. Item # 1-1 and Item # 1-5 exhibit corresponding class characteristics and areas of matching individual characteristics. They were identified as having been fired through the same firearm barrel. Item # 1-2 and Item # 1-3 exhibit corresponding class characteristics and areas of matching individual characteristics. They were identified as having been fired through the same firearm barrel. Item # 1-1 and Item # 1-5 exhibit corresponding class characteristics as Item # 1-2 and Item # 1-3; however, the comparison was inconclusive. Due to insufficient agreement or disagreement of individual characteristics, Item # 1-1 and Item # 1-5 could neither be identified nor eliminated as having been fired through the same firearm barrel as Item # 1-2 and Item # 1-3. Item # 1-4 exhibits different class characteristics as Items # 1-1, # 1-2, # 1-3, and # 1-5. Item # 1-4 was eliminated as having been fired through the same firearm barrel as any of Items # 1-1, # 1-2, # 1-3, and # 1-5. Based on a review of known references, Item # 1-4 is consistent with having been fired through the barrel of the following firearms: Fabrique Nationale, Ruger, and Smith & Wesson. It should be noted this is not an all-inclusive list and any suspect 9mm Luger caliber firearm should be submitted along with Item # 1-4 for further examination.</p>
MJ9CYC	<p>IDENTIFICATION: ITEMS #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 & 5 ARE ALL IDENTIFIED AS HAVING BEEN FIRED FROM THE SAME FIREARM. ELIMINATION: ITEMS#1, 2, 3, 4 & 5 WERE MICROSCOPICALLY EXAMINED AND COMPARED. BASED ON THE OBSERVED DISAGREEMENT OF (CLASS AND/OR INDIVIDUAL) CHARACTERISTICS, ITEMS#1 & 5 ARE ELIMINATED AS HAVING BEEN FIRED IN THE SAME FIREARM AS ITEM# 2, 3 & 4. IDENTIFICATION: ITEMS #2 & 3 WERE MICROSCOPICALLY EXAMINED AND COMPARED. BASED ON THE OBSERVED AGREEMENT OF THEIR CLASS CHARACTERISTICS AND SUFFICIENT AGREEMENT OF THEIR INDIVIDUAL CHARACTERISTICS, ITEMS #2 & 3 ARE ALL IDENTIFIED AS HAVING BEEN FIRED FROM THE SAME FIREARM. ELIMINATION: ITEMS#1, 2, 3, 4 & 5 WERE MICROSCOPICALLY EXAMINED AND COMPARED. BASED ON THE OBSERVED DISAGREEMENT OF (CLASS AND/OR INDIVIDUAL) CHARACTERISTICS,</p>

TABLE 2

WebCode	Conclusions
	ITEMS#2 & 3 ARE ELIMINATED AS HAVING BEEN FIRED IN THE SAME FIREARM AS ITEM# 1, 4 & 5. ELIMINATION: ITEMS#1, 2, 3, 4 & 5 WERE MICROSCOPICALLY EXAMINED AND COMPARED. BASED ON THE OBSERVED DISAGREEMENT OF (CLASS AND/OR INDIVIDUAL) CHARACTERISTICS, ITEM#4 IS ELIMINATED AS HAVING BEEN FIRED IN THE SAME FIREARM AS ITEM#1, 2, 3 & 5
MN3TE7	In my opinion, the bullet from Item 5 was fired in the same firearm as the three bullets contained in Item 1. In my opinion, the bullets contained in Items 2,3 and 4 were not fired in the same firearm as the bullets contained in Item 1.
MPB7V8	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 bullet ITEM 5 was fired in the same firearm as the tests ITEM 1.
MURR2E	The evidence in items 1 through 5 was analyzed by physical and microscopic examination. The three (3) bullets in items 2, 3, and 4 were determined not to have been fired from the same weapon as the three (3) known bullets in item 1. The bullet in item 5 was determined to have been fired from the same weapon as the three (3) known bullets in item 1. The two (2) bullets in items 2 and 3 were fired from one weapon. The bullet in item 4 was fired from a different weapon than the two (2) bullets in items 2 and 3. Further analysis of the three (3) bullets in items 2, 3, and 4 is pending submission of two (2) other weapons for additional comparison.
MX69Y4	The SCCY pistol, item #1, was test fired using material from the laboratory collection and was found to be operable. The reference fired projectiles from Item #1 were microscopically examined and compared to the unknown caliber copper jacketed projectiles, items #2 through #5. The following was determined: Item #5 possessed the same class characteristics as well as sufficient agreement of individual markings to the test fired material from item #1 to determine that item #5 was fired from the SCCY pistol, item #1. Items #2 and #3 were consistent with .38 caliber class ammunition (which includes 9mm), possessed the same class characteristics as well as sufficient agreement of individual markings to each other to determine that they were fired from the same weapon. Further examination revealed that they possessed similar class characteristics but significant differing individual markings from the test fired material from item #1 to determine that they were fired in a second weapon (not fired from item #1). Item #4 was consistent with .38 caliber class ammunition (which includes 9mm), possessed different class characteristics from items #1, #2, #3 and #5, and was fired from a third weapon (not fired from item #1)
MZ4GYU	Item 1A, 1B, and 1C were microscopically identified as having been fired from the same firearm. Item 2 and Item 3 were microscopically identified as having been fired from the same unknown firearm. Item 2 and Item 3 were not fired from the same firearm as Item 1 tests. Item 2 and Item 3 were determined to be of 9mm caliber, displaying rifling characteristics of 7 lands and grooves, right twist. Manufacturers of firearms with similar rifling characteristics include, but are not limited to: SCCY Industries and SKYY Industries. Item 4 was not fired from the same firearm as Item 1 tests, nor from the same firearm as Items 2 and 3. Item 4 was determined to be of 9mm caliber displaying rifling characteristics of 5 lands and grooves, right twist. Manufacturers of firearms with similar rifling characteristics include, but are not limited to: Fabrique Nationale, Ruger, and Smith & Wesson. Item 5 was microscopically identified as having been fired from the same firearm as Item 1 tests. Item 5 was determined to be of 9mm Luger caliber, displaying rifling characteristics of 7 lands and grooves, right twist.
N988NA	Item 5 bullet was fired from the same firearm which fired the three reported test fired bullets, item 1. Due to class agreement and lack of repeatable individual mark/pattern areas, items 2 and 3 bullets were unable to be identified or eliminated as being fired from the same firearm

TABLE 2

WebCode	Conclusions
	as item 1 and 5 bullets. Item 2 was fired from the same firearm which fired item 3 bullet. Item 4 bullet was not fired from the same firearm(s) which fired the bullets item 1, 2, 3, and 5. The submitted bullet, item 4, is most consistent with some 9mm Luger caliber bullets. It was fired from a firearm capable of chambering a cartridge of that caliber with five lands and grooves inclined to the right. Possible weapons manufacturers would include, but not be limited to, Fabrique Nationale, Ruger, and Smith and Wesson.
N9FZ34	4 - has different rifling, not fired in gun item 1. 2 + 3 - in my opinion significant matching detail to each other, but significant differences to item 1. 2 + 3 not fired in gun item 1 but fired in same gun, gun 2. 5 - in my opinion significant matching detail in striations in lands. 5 fired in gun item 1. Gun item 1 fired fatal shot. 3 guns.
NAEQ7H	Based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Items 1 and 5, were identified as having been fired from the same firearm. Based on agreement of discernible class characteristics and sufficient corresponding individual detail, the fired bullets, Items 2 and 3, were identified as having been fired from the same firearm. Based on significant disagreement of individual characteristics, the fired bullets, Items 1 and 5, could not have been fired from the same firearm as the fired bullets, Items 2 and 3. Based on significant disagreement of class characteristics, the fired bullet, Item 4, could not have been fired from the same firearms as the fired bullets, Items 1-3 and 5.
NUBYXN	The fired bullets in Items 2, 3, 4, and 5 (questioned) were microscopically compared to test fired bullets in Item 1 (known). It was determined that the fired bullet in Item 5 (questioned) was fired from the same firearm as the test fired bullets in Item 1 (known). It was determined that the fired bullets in Items 2, 3, and 4 (questioned) were not fired from the same firearm as the test fired bullets in Item 1 (known). It was also determined that the fired bullets in Items 2 and 3 (questioned) were fired from the same unknown firearm.
NVHC9A	Item 1 consisted of three test fired 9mm bullets with 7R conventional rifling. Comparison with items 2-5 showed that the bullet in item 5 had been fired from the same gun, a SCCY CPX-2. Items 2-4 had been fired in different firearms, items 2 and three in the same 7R rifled gun and item 4 in a gun with 5R conventional rifling.
NVHGVJ	I have examined the fired bullets contained in Items 1 to 5. Class characteristics show the bullets contained in Items 1, 2, 3, and 5 had been fired through the barrel of a firearm containing 7 lands and grooves with a right hand twist. The fired bullet Item 4 had been fired in the barrel of a firearm containing 5 lands and grooves with a right hand twist. This excludes the fired bullet Item 4 based on class characteristics. I conducted a comparison between one of the test fired bullets from the exhibit pistol Item 1 and the exhibit fired bullet Item 5. The fired bullets displayed a distinct presence of land marks with limited groove markings. There was a strong correspondence in the striae detail in all of the seven land markings. The result of this comparison was an identification; that is, the exhibit fired bullet had been fired in the exhibit pistol Item 1. I conducted a comparison between the exhibit fired bullet Item 2 and the exhibit fired bullet Item 3. The fired bullets displayed a distinct presence of land marks with limited groove markings. There was a strong correspondence in the striae detail in all of the seven land markings. The result of this comparison was an identification; that is, the exhibit fired bullets Item 2 and Item 3 had been fired in another pistol.
NYK79Z	Item #1 and Item #5 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items #1 and #5 are identified as having been fired from the same firearm. Item #1 and Item #2 were microscopically examined and compared. Based on the observed disagreement of individual characteristics, Items #1 and #2 are eliminated as having been

TABLE 2

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	fired from the same firearm. Item #1 and Item #3 were microscopically examined and compared. Based on the observed disagreement of individual characteristics, Items #1 and #3 are eliminated as having been fired from the same firearm. Item #1 and Item #4 were microscopically examined and compared. Based on the observed disagreement of class characteristics, Items #1 and #4 are eliminated as having been fired from the same firearm.
NZAQN6	The bullet identified as item "5" was fired by the same firearm that fired the bullets identified as item "1". The bullets identified as items "2, 3, 4" were not fired by the same firearm that fired the bullets identified as item "1".
PEE4ZM	Bullet Analysis: Physical (Visual Examination), Digital Micrometer/Electronic Balance/Digital Caliper, Microscopy (Comparison Microscopy). Items 2, 3, 4 and 5 are 38 caliber class bullets based upon the diameter. Item 5, the bullet, was fired through the barrel of the SCCY model CPX-2 pistol based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the bullets, were not fired through the barrel of the SCCY model CPX-2 pistol based upon different individual microscopic characteristics. Item 4, the bullet, was not fired through the barrel of the SCCY model CPX-2 pistol nor through the barrel of the same firearm as Items 2 and 3, the bullets, based upon different class characteristics.
PGQAZ3	Upon request, a test fired bullet from Item 1 was microscopically examined and compared with a recovered fired bullet, Item 5. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Item 5 is identified as having been fired from the same pistol as Item 1. Upon request, a test fired bullet from Item 1 was microscopically examined and compared with a recovered bullet, Item 4. Based on the observed disagreement of their class characteristics, Item 4 is eliminated as having been fired from the same firearm as Item 1. Upon request, a recovered fired bullet, Item 2, was microscopically examined and compared with a recovered fired bullet, Item 3. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Item 2 and Item 3 are identified as having been fired from the same firearm. Upon request, the recovered fired bullets, Items 2 and 3, were microscopically examined and compared with test fired bullets from Item 1, and a recovered fired bullet, Item 5. There is observed agreement of their class characteristics. However, based on the observed disagreement of individual characteristics, Items 2 and 3 were not identified as having been fired from the same pistol as Items 1 and 5.
PHRXN8	Item 1 contains three (3) fired 9mm Luger caliber full-metal copper-jacketed bullets test fired from the known Item 1 firearm, that were microscopically compared to each other and determined to contain reproducible individual markings. Item 5 is one (1) fired .38/9mm class caliber full-metal copper-jacketed bullet that was fired from a barrel rifled with seven (7) lands and grooves, right twist. Item 5 was microscopically compared to the Item 1 bullets, and it was identified as having been fired from the known Item 1 firearm. Items 2 and 3 are two (2) fired .38/9mm class caliber full-metal copper-jacketed bullets that were fired from a barrel rifled with seven (7) lands and grooves, right twist. Items 2 and 3 were microscopically compared to each other and to the Item 1 test fires. Items 2 and 3 were identified as having been fired by the same firearm as each other; however, they could not be identified or eliminated as having been fired from the known Item 1 firearm due to insufficient agreement or disagreement of individual markings. Firearms that produce rifling impressions like those found on the Items 2 and 3 bullets include but are not limited to those provided in the GRC list that accompanies this report. Please note that this list is not all inclusive. Item 4 is one (1) fired .38/9mm class caliber full-metal copper-jacketed bullet that was fired from a barrel rifled with five (5) lands

TABLE 2

WebCode	Conclusions
	and grooves, right twist. The Item 4 bullet was eliminated as having been fired in known Item 1 firearm and from the same firearm as Items 2 and 3 due to differences in class characteristics. Firearms that produce rifling impressions like those found on the Item 4 bullet include but are not limited to those provided in the GRC list that accompanies this report. Please note that this list is not all inclusive. [Attachment not provided by participant]
PP9HNY	Items 1 and 5 were identified as having been fired by the same firearm, based on the agreement of class characteristics, and individual characteristics observed within the land engraved areas. Items 2 - 4 were eliminated as having been fired by the same firearm as Items 1 and 5, based on the differences in class characteristics, and individual characteristics observed within the land engraved areas.
Q3P6HC	The Item 1 (three bullets fired using the recovered firearm (known) and the four bullets recovered (Items 2, 3 and 4) were microscopically examined and compared. Based upon matching microscopic, one bullet (Item 5) was identified as having been fired in the suspect's firearm (item 1). Two of the bullets (Items 2 and 3) were fired in a different firearm (second firearm) and the other bullet (Item 4) was fired in a different firearm (third firearm).
Q8M8HQ	PROJECTILE D (ITEM 5) WAS FIRED IN THE SUBMITTED 9MM SCCY PISTOL, MODEL CPX-2, SERIAL NUMBER UNKNOWN (ITEM 1). PROJECTILE A (ITEM 2) AND PROJECTILE B (ITEM 3) WERE FIRED IN A SECOND 9MM WEAPON. SUSPECT WEAPONS INCLUDE 9MM SCCY AND SKYY PISTOLS; HOWEVER, ANY SUSPECT WEAPON SHOULD BE SUBMITTED FOR ANALYSIS. PROJECTILE C (ITEM 4) WAS FIRED IN A THIRD 9MM WEAPON. SUSPECT WEAPONS INCLUDE 9MM SMITH & WESSON PISTOLS; HOWEVER, ANY SUSPECT WEAPON SHOULD BE SUBMITTED FOR ANALYSIS.
QC2UMG	I conducted a microscopic comparison of test fired bullets from Item 1 with exhibit (questioned) bullets Items 2, 3, 4 & 5. Items 2 and 3 were eliminations and in my opinion were not discharged in the same firearm that produced the test fired bullets of Item 1. Item 4 was also an elimination based on class characteristics i.e. different number and size of lands and grooves. Item 5 was an identification with there being a positive match of all discernible class characteristics and sufficient agreement of individual characteristics. In my opinion Item 5 was discharged in the same firearm that produced the test fired bullets of Item 1. A comparison examination of Item 2 to Item 3 resulted in them being matched to each other. They were discharged in the same unknown firearm, but a different firearm to that which produced Items 1 & 5.
QGENBZ	The Item 2-5 bullets were weighed, measured and examined for design characteristics, finding them to possess features most commonly seen in 9mm Luger ammunition. Item 2 exhibits different bullet base characteristics than Items 3-5, but these differences are not sufficiently distinctive to determine whether Item 2 represents a different brand/style of ammunition than the other questioned bullets. The Item 1 bullet exemplars were microscopically compared to Items 2 and 3, finding class characteristic similarity (rifling widths and land/groove count) but individual characteristic differences. It was concluded that Items 2 and 3 were fired by a different firearm than was used to produce the Item 1 exemplars (firearms not submitted). Due to rifling similarities, it is possible that Items 2 and 3 were fired in a make/model/configuration of firearm similar to the source of the Item 1 bullets. The Item 1 bullet exemplars were microscopically compared to Item 4, finding class characteristic differences (land/groove count). It was concluded that Item 4 was fired by a different firearm than was used to produce the Item 1 exemplars (firearms not submitted). As evidenced by rifling differences, the firearm used to fire Item 4 is of a different make/model/configuration than was used to fire the Item 1 bullets. The source of Item 4 is also of a different make/model/configuration than was used to fire Items 2 and 3. The Item 1 bullet exemplars were microscopically compared to Item 5,

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QJXMLA	<p>finding class characteristic and individual distinguishing characteristic correspondence. It was concluded that Items 1 and 5 were fired by the same firearm (listed in case summary).</p> <p>The bullets identified above as Items 2, 3, and 5 were microscopically compared to one another and to the test fired bullet contained in Item 1 with the following results: Item 5 was identified as having been fired in the same firearm that produced the test fired bullets contained in Item 1 based on agreement of all discernable class characteristics and individual detail agreement. The firearm that generated the test fired bullets contained in Item 1 was eliminated as a potential firing source for Items 2 and 3 based on a lack of agreement of individual detail. Items 2 and 3 were identified as having been fired in the same unknown firearm based on agreement of all discernable class characteristics and individual detail agreement. Manufacturers of firearms that exhibit similar general rifling characteristics include, but are not limited to: SCCY and SKYY Industries. As this list is not considered all inclusive, any firearm with suspected involvement in this case should be forwarded to the laboratory for evaluation/comparison. The firearm that generated the test fired bullets contained in Item 1 and the unknown firearm that fired Items 2 and 3 were eliminated as a potential firing sources for Item 4 based on distinct differences in class characteristics. Item 4 is consistent with a nominal caliber 38 bullet bearing five land impressions and 5 groove impressions with a right hand twist. Manufacturers of firearms that exhibit class characteristics similar to those observed on Item 4 include, but are not limited to: Fabrique Nationale, Ruger, and Smith and Wesson. As this list is not considered all inclusive, any firearm with suspected involvement in this case should be forwarded to the laboratory for evaluation/comparison.</p>
QKPVC6	<p>1. Examinations showed Item 5 was discharged from the same firearm as Item 1. 2. Examinations showed Items 2, 3, and 4 were not discharged from the same firearm as Item 1.</p>
QL8PCF	<p>One of the bullets (5) was fired from the SCCY model CPX-2 pistol (1). Two of the bullets (2, 3) were fired from the same firearm. Two of the bullets (2, 3) were not fired from the same firearm as was one of the other bullets (5) or from the SCCY model CPX-2 pistol (1). Two of the bullets (2, 3) are consistent with 9mm Luger caliber and were fired from a firearm with seven lands and grooves inclined to the right. Possible firearms from which two of the bullets (2, 3) may have been fired include, but are not limited to, 9mm Luger caliber pistols marketed by SCCY and SKYY Industries. One of the bullets (4) was not fired from the SCCY model CPX-2 pistol (1). One of the bullets (4) was not fired from the same firearm as were any of the other three bullets (2, 3, 5). One of the bullets (4) is consistent with 9mm Luger caliber and was fired from a firearm with five lands and grooves inclined to the right. Possible firearms from which one of the bullets (4) may have been fired include, but are not limited to, 9mm Luger caliber pistols marketed by Smith and Wesson and 9mm Luger caliber revolvers marketed by Ruger.</p>
QQEFDZ	<p>The submitted specimens marked as Items 2, 3, and 5 were examined and identified as three (3) fired 9mm Luger caliber jacketed bullets exhibiting seven (7) land and groove impressions with a right twist. The submitted specimen marked as Item 4 was examined and identified as one (1) fired 9mm Luger caliber jacketed bullet exhibiting five (5) land and groove impressions with a right twist. Items 2 through 5 were microscopically inter-compared and compared to Item 1 sample bullets. As a result of microscopic comparison, it was concluded that Item 5 was identified as having been fired from the same firearm that fired Item 1 sample bullets. As a result of microscopic comparison, it was concluded that Items 2 and 3 were identified as having been fired from the same unknown firearm, however, they were eliminated as having been fired from the same firearm that fired Item 1 sample bullets due to differences in individual characteristics. Item 4 was eliminated as having been fired from the same firearm that fired Item 1 sample bullets and was also eliminated as having been fired from the same firearm that fired Items 2 and 3 due to differences in class characteristics. Firearms that</p>

TABLE 2

WebCode	Conclusions
	produce similar rifling characteristics as those exhibited on Items 2 and 3 include but are not limited to: 9mm Luger caliber semi-automatic pistols marketed by SCCY and SCCY/SKKY Industries. Firearms that produce similar rifling characteristics as those exhibited on Item 4 include but are not limited to: 9mm Luger caliber revolvers and pistols marketed by Smith & Wesson and 9mm Luger caliber revolvers marketed by Ruger.
QXYV9D	The Item 5 bullet was identified as having been fired from the barrel of the Item 1 pistol. The Item 2 and Item 3 bullets were identified as having been fired from the barrel of the same firearm. Due to a lack of sufficient corresponding microscopic marks of value, no conclusion could be reached as to whether the Item 2 and 3 bullets were fired from the barrel of the Item 1 pistol. Item 2 and 3 are .38 caliber/9mm Luger full metal jacket bullets that were fired from a barrel rifled with seven grooves, right twist. A check of the [Laboratory's] General Rifling Characteristics (GRC) database produced a list of firearms with GRCs like those present on the Item 2 and 3 bullets that include pistols marketed by SCCY. Due to a difference in class characteristics, the Item 4 bullet was excluded as having been fired from the barrel of the Item 1 pistol or the same firearm as the Item 2 and 3 bullets. Item 4 is a .38 caliber/9mm full metal jacket bullet that was fired from a barrel rifled with five grooves, right twist. A check of the [Laboratory's] General Rifling Characteristics (GRC) database produced a list of firearms with GRCs like those present on the Item bullet that includes pistols marketed by Smith & Wesson.
QYCUUT	Items 1 (A-C), 2, 3, 4, and 5 (expended bullets): Items 2 through 5 were first evaluated for discernable class characteristics and suitability for comparison. Items 2 through 5 are nominal .38 caliber and have a full-metal jacket with open base design. Microscopic assessment established that these items are suitable for microscopic comparison. Items 2, 3, and 5 have seven (7) conventional land impressions with a right twist. Item 4 has five (5) conventional land impressions with a right twist. Because of significant disagreement of discernible class characteristics, Item 4 was eliminated as being fired in the same firearm as Items 2, 3, or 5. The test fired bullets in Item 1 have seven (7) conventional land impressions with a right twist. Because of significant disagreement of discernible class characteristics, Item 4 was eliminated as being fired in the suspect firearm. A test-fired bullet from Item 1 was microscopically compared to Items 2, 3, and 5. Microscopic comparison of these bullets revealed the following: a) Item 5 has the same class of firearm-produced marks and sufficient corresponding individual marks to conclude that Item 5 was discharged in the suspect firearm. b) Items 2 and 3 have similar class of rifling marks to those in Item 1, but significant disagreement of firearm-produced individual marks. Items 2 and 3 were not discharged in the suspect firearm. Microscopic comparison of Items 2 and 3 revealed that they have the same class of firearm-produced marks and sufficient corresponding individual marks to conclude that Item 2 and Item 3 were discharged in the same, unknown firearm. Three firearms are represented by the evidence bullets. The suspect firearm discharged Item 5, an unknown firearm discharged Item 2 and Item 3, and a second unknown firearm discharged Item 4.
QZLXBX	1) Examination of Exhibit 1 revealed three 9mm Luger caliber fired bullets. Examination of Exhibits 2, 3, 4, and 5 each revealed one 9mm Luger caliber fired bullet. 2) The fired bullets in Exhibits 1 and 5 were fired from the same firearm based on agreement of class and individual characteristics. 3) The fired bullets in Exhibits 2 and 3 were fired from the same firearm based on agreement of class and individual characteristics. 4) The fired bullets in Exhibits 1 and 5 were not fired from the same firearm as the fired bullets in Exhibits 2 and 3 based on agreement of class characteristics and a sufficient disagreement of individual characteristics. 5) The fired bullet in Exhibit 4 was not fired from the same firearm as the fired bullets in Exhibits 1, 2, 3, or 5 based on a disagreement of class characteristics.
R2CKZ7	The bullet in Item #5 has been fired in the SCCY CPX-2 pistol recovered in the suspect's

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R2Q8CT	<p>vehicle. The bullets from Items #2 and #3 (on the road) were both fired in another firearm, which is likely to be of the same make and model than the one recovered on the scene, another SCCY CPX-2 pistol, since the class characteristics are very uncommon (7 lands). The bullet from Item #4 (sidewalk) has been fired from a third firearm.</p> <p>1. PISTOL SCCY CPX-2 CALIBER 9X19MM SERIAL NUMBER ????? FIRED BULLET THAT INSCRIBED ITEM#5. 2. PISTOL SCCY CPX-2 CALIBER 9X19MM SERIAL NUMBER ????? DID NOT FIRED BULLETS THAT INSCRIBED ITEM#2, ITEM#3 AND ITEM#4. 3. BULLETS THAT INSCRIBED ITEM#2 AND ITEM#3 WERE FIRED IN THE SAME FIREARM BUT DIFFERENT FROM THE SUSPECT PISTOL AND DIFFERENT FROM THE PISTOL THAT FIRED BULLET THAT INSCRIBED ITEM#4.</p>
R2RVYY	<p>The bullet marked #5 was examined and microscopically compared to the test bullets marked #1 with positive results (identifications). The bullet was test fired in the submitted pistol. The bullets marked #2 and #3 were examined and microscopically compared to each other with positive results (Identification). The bullets were test fired in the same unknown firearm. The bullet marked #4 was examined and microscopically compared to the test bullets marked #1 and the bullets marked #2, #3 and #5 with negative results (Elimination). The bullets marked #2, #3, #4 were examined and microscopically compared to the test bullets marked #1 with negative results (Elimination).</p>
R8HNZZ	<p>From the sample that had been received, it can be concluded that each bullet consists of 9mm Luger caliber ammunition and the rifling type for each bullet is "cut or button" which give the land and groove mark also the characteristics on the bullet for ballistic test. Three bullet in item 1 had the same characteristics and can be defined had been fired from the same gun which are SCCY CPX-2 9mm handgun that had been recovered in the crime scene. The comparison between three (3) bullet in item 1 and the bullet in item 2, 3 and 5 give the result that all bullet have same characteristics, therefore we can concluded that bullet in item 1, 2, 3 and 5 are been fired in the same firearm which are SCCY CPX-2 9mm handgun. Meanwhile, comparison between three (3)bullet in item 1 and the bullet in item 4 give the result that bullet in item 4 did not have same characteristics with each bullet in item 1, which give the information another handgun been use in the case. Therefore, from the comparison and finding, it can be conclude that 2 firearm are been used in the crime scene including the suspect firearm that had been seized.</p>
REF2TU	<p>1. Examination of Exhibit 1 disclosed it to be three fired 9mm Luger caliber copper jacketed bullets. Exhibit 1 is reported as having been test fired from the suspect's 9mm caliber SCCY, model CPX-2 handgun. 2. Examination of Exhibits 2, 3, and 5 disclosed them to be three fired 9mm Luger caliber copper jacketed bullets, displaying seven land and groove impressions with a right hand twist. 3. Examination of Exhibit 4 disclosed it to be a fired 9mm Luger caliber copper jacketed bullet, displaying five land and groove impressions with a right hand twist. 4. Exhibits 1 through 5 were visually and microscopically compared to one another. a. As a result of microscopic comparison, it was concluded that Exhibit 5 was identified as having been fired from the same firearm as Exhibit 1 due to an agreement of class characteristics and a sufficient agreement of individual characteristics. b. Exhibits 2 and 3 were identified as having been fired from the same firearm due to an agreement of class characteristics and a sufficient agreement of individual characteristics; however, due to an agreement of class characteristics and a sufficient disagreement of individual characteristics, they were eliminated as having been fired from the same firearm as Exhibit 1. i. Firearms with similar rifling characteristics as those displayed on Exhibits 2 and 3 include, but are not limited to, 9mm Luger caliber firearms marketed by SCCY and SKYY Industries. c. Due to a disagreement of class characteristics, Exhibit 4 was eliminated as having been fired from the same firearm as Exhibits 1 and 5, or</p>

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WebCode	Conclusions
	Exhibit 2 and 3. i. Firearms with similar rifling characteristics as those displayed on Exhibit 4 include, but are not limited to, 9mm Luger caliber firearms marketed by Ruger and Smith & Wesson.
RG829D	One of the bullets (5) was fired from the SCCY model CPX-2 pistol (1). Two of the bullets (2, 3) were fired from the same firearm. Two of the bullets (2, 3) were not fired from the same firearm as was one of the other bullets (5) or from the SCCY model CPX-2 pistol (1). Two of the bullets (2, 3) are consistent with 9mm Luger caliber and were fired from a firearm with seven lands and grooves inclined to the right. Possible firearms from which two of the bullets (2, 3) may have been fired include, but are not limited to, 9mm Luger caliber pistols marketed by SCCY and SKYY. One of the bullets (4) was not fired from the same firearm as were any of the other three bullets (2, 3, 5) or from the SCCY model CPX-2 pistol (1). One of the bullets (4) is consistent with 9mm Luger caliber and was fired from a firearm with five lands and grooves inclined to the right. Possible firearms from which one of the bullets (4) may have been fired include, but are not limited to, 9mm Luger caliber revolvers marketed by Ruger and Smith & Wesson and 9mm Luger caliber pistols marketed by Fabrique Nationale and Smith & Wesson.
RUAEL4	Fired projectile Item 5 was 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 Items 2 and 3 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 Items 2 and 3 were eliminated as having been fired from the same firearm as test fired projectiles within Item 1 based on agreement of class characteristics but disagreement of individual characteristics within the land impressions. Fired projectile Item 4 was eliminated from having been fired in the same firearm as test fired projectiles within Item 1 and fired projectile Items 2, 3, and 5 based on disagreement of class characteristics.
RXZEZR	Items 2 and 3 (fired bullets): Microscopic comparison of these fired bullets to a test-fired bullet, item 1b, from the SCCY pistol revealed that they have similar class of rifling marks, but significant disagreement in individual marks. These bullets were not discharged in this SCCY pistol. Microscopic comparison of items 2 and 3 revealed that they have the same class of rifling and sufficient corresponding individual marks to conclude they were discharged in the same unknown firearm. Item 4 (fired bullet): Microscopic comparison of this bullet to items 1a, 2, 3, and 5 revealed significant differences in class of rifling marks. This bullet was discharged in a different unknown firearm. Item 5 (fired bullet): Microscopic comparison of this fired bullet to a test-fired bullet, item 1a, revealed that they have the same class of rifling and sufficient corresponding individual marks to conclude they were discharged in the same SCCY pistol.
T329XR	Item 1 and Item 5 bullets were fired through the same gun barrel (firearm #1). Item 2 and Item 3 bullets were fired through the same gun barrel (firearm #2). Item 4 bullet was fired through a gun barrel different from the gun barrels that Items 1, 2, 3 and 5 were fired through (firearm #3).
T76Z8T	1. Examination of Exhibits 2, 3, 4 and 5 disclosed four 9mm bullets which were visually examined and microscopically compared to the three Exhibit 1 test standards from a SCCY CPX-2, 9mm Luger pistol. a. Microscopic comparison disclosed sufficient agreement of class and individual characteristics to conclude that Exhibit 5 was fired in the same firearm as the Exhibit 1 test standards. b. Microscopic comparison disclosed a significant disagreement of class characteristics to conclude that Exhibit 4 was not fired in the same firearm as the Exhibit 1 test standards. c. Microscopic comparison disclosed sufficient agreement of class and individual characteristics to conclude that Exhibit 2 and Exhibit 3 were fired in the same firearm. However, they were not fired in the same firearm as the Exhibit 1 test standards nor

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	Exhibit 4. 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.
T7YXBT	Items 2, 3 and 4 had been fired out of an other barrel than Item 1. Item 5 had been fired out of the same barrel than Item 1.
TA2QD6	The below listed item was macroscopically and microscopically examined and compared with test fires from the SCCY 9mm luger pistol, Lab Evidence# 001-A1. Numerous corresponding individual characteristics were observed. Therefore, it is my opinion that the below listed item was fired from this firearm. Lab Evidence# Item# Item Description 001-A5 5 Spent 38 caliber bullet .The below listed items were macroscopically and microscopically examined and compared with test fires from the SCCY 9mm luger pistol, Lab Evidence# 001-A1. It is my opinion that these items were not fired from this firearm. The below listed items were further microscopically compared to each other. Numerous corresponding individual characteristics were observed. Therefore, it is my opinion that the below listed items were fired from the same unknown firearm. Lab Evidence# Item# Item Description 001-A2 2 Spent 38 caliber bullet 001-A3 3 Spent 38 caliber bullet. The below listed item was macroscopically and microscopically examined and compared with test fires from the SCCY 9mm luger pistol, Lab Evidence# 001-A1, and with 001-A2 and 001-A3. It is my opinion that this item was not fired from this firearm, or from the unknown firearm that fired 001-A2 and 001-A3. Lab Evidence# Item# Item Description 001-A4 4 Spent 38 caliber bullet. [Participant submitted data in a format that could not be reproduced in this report]
TC39EZ	All items were microscopically examined and compared with the following conclusion: 1. Only one questioned bullet(Item 5) was fired from the same firearm as the known bullets(Item 1). 2.The questioned bullets(Item 2 and Item 3) were fired from the same firearm but not the recovered firearm. 3.The questioned bullet(Item 4) was fired from another unknown firearm.
TEWMV4	The firearm that fired the item 1 tests is identified as having fired item 5. Items 2 and 3 are identified as having been fired in the same unknown firearm (not the firearm that fired the item 1 tests and item 5). Item 4 is eliminated from having been fired in the firearm that fired the item 1 tests and item 5. Item 4 is also eliminated from having been fired in the same firearm that fired items 2 and 3. Item 4 was fired in a 2nd unknown firearm.
TGZTK6	SUMMARY/RESULTS: Item 5, the bullet recovered from victim, was fired in the SCCY CPX-2 9mm caliber pistol recovered from the suspect. Item 4, the bullet recovered from the sidewalk was not fired in the SCCY CPX-2 9mm caliber pistol recovered from the suspect. Items 2 and 3 were fired from the same firearm; however it is inconclusive as to whether or not items 2 and 3 were fired in the SCCY CPX-2 9mm caliber pistol. EXAMINATION: Item 5 was compared to the test fired bullets from the suspect's pistol, item 1. There is agreement of all discernible class characteristics and sufficient individual characteristics to conclude item 5 was fired from the suspect's pistol. Item 4 was not fired in the same firearm that fired item 1 the test fires. The bullet has significantly different class characteristics compared to item 1. Items 2 and 3 were fired from the same firearm; it is inconclusive as to whether or not items 2 and 3 were fired from the suspect's pistol used to make the test fires, item 1. Items 2 and 3 were compared to each other and to item 1. There is agreement of all discernible class characteristics and

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	sufficient individual characteristics to conclude items 2 and 3 were fired from the same firearm. There is overall agreement of the class characteristics with item 1, however there is insufficient agreement of individual characteristics to conclude the bullets were fired in the suspects pistol. There were also insufficient observable differences in the individual characteristics to exclude the bullets as having been fired in the suspect's pistol, thus it is inconclusive as to whether or not items 2 and 3 were fired with the same pistol used to make the test fires, item 1.
TNMYGW	The evidence bullets were examined and microscopically compared to each other and to the known bullets from the SCCY pistol with the following results: One of the bullets (Lab Item 5) was identified as having been fired from the SCCY pistol. Two of the bullets (Lab Items 2 and 3) were identified as having been fired from a single firearm, and were eliminated as having been fired from the SCCY pistol due to differences in individual characteristics. These bullets are consistent with nominal .38 caliber to include 9mm Luger. Some of the more commonly encountered firearms manufactured with general rifling characteristics similar to those present on these bullets include, but are not necessarily limited to SCCY and SKYY pistols. One of the bullets (Lab Item 4) was eliminated as having been fired the SCCY pistol and the firearm that fired Lab Items 2 and 3 due to differences in general rifling characteristics. This bullet is consistent with nominal .38 caliber to include 9mm Luger. Some of the more commonly encountered firearms manufactured with general rifling characteristics similar to those present on this bullet include, but are not necessarily limited to Fabrique Nationale pistols, Ruger revolvers, and Smith & Wesson pistols and revolvers.
TR7XR7	The evidence in items 1 through 5 was analyzed by physical and microscopic examination. The three (3) bullets in items 2, 3, and 5 were 9mm bullets which had been fired from the barrel of weapons rifled with seven (7) lands and grooves, right twist. The bullet in item 4 was a 9mm bullet which had been fired from the barrel of a weapon rifled with five (5) lands and grooves, right twist. The three (3) bullets in items 2, 3, and 4 were determined not to have been fired from the weapon which fired the three (3) bullets in item 1. The two (2) bullets in items 2 and 3 were fired from one weapon. The bullet in item 5 was determined to have been fired from the same weapon which fired the three (3) bullets in item 1. Further analysis of the three (3) bullets in items 2, 3, and 4 is pending submission of two (2) weapons for additional comparison.
UM3JHL	Proficiency Test 19-527: Firearms Examination, Participant Code [Participant Code]. Examination of the three (3) fired full metal jacket bullets (Item 1) revealed they are 9mm caliber and fired through a firearm barrel rifled with seven (7) lands and grooves with a right-hand twist. It should be noted Item 1 are reportedly test fired bullets from a SCCY semi-automatic pistol. Examination of the one (1) fired full metal jacket bullet (Item 5) revealed it is 9mm caliber and fired through a firearm barrel rifled with seven (7) lands and grooves with a right-hand twist. Microscopic examination of Item 5 with the reported test fired bullets (Item 1) revealed Item 5 was fired through the same firearm barrel as the reported test fired bullets in Item 1. Examination of the two (2) fired full metal jacket bullets (Items 2 & 3) revealed they are 9mm caliber and fired through a firearm barrel rifled with (7) lands and grooves with a right-hand twist. Microscopic examination of Items 2 & 3 revealed they were fired through the same firearm barrel. Items 2 & 3 were not fired through the same firearm barrel as Items 1 & 5 due to differences in individual characteristics. Examination of the one (1) fired full metal jacket bullet (Item 4) revealed it is 9mm caliber and fired through a firearm barrel rifled with five (5) lands and grooves with a right-hand twist. Item 4 was not fired through the same firearm barrel as Items 1, 2, 3, & 5 due to differences in class characteristics.
UMMHEK	ITEM 2 AND ITEM 3: These bullets were eliminated from the firearm that fired the item 1 bullets. ITEM 2 AND ITEM 3: Items 2 and 3 were identified to the same unknown firearm. ITEM 4: This bullet was eliminated from the firearm that fired the item 1 bullets.

TABLE 2

WebCode	Conclusions
	<p>Manufacturers/brands of firearms that could have fired the item 4 bullet include, but are not limited to Ruger and Smith & Wesson. ITEM 5: This bullet was identified to the firearm that fired the item 1 bullets. All firearms were visually examined and test fired unless otherwise noted. The method of testing for ammunition components included visual examination and microscopic comparisons. The test results for the above listed items fall into one of the four conclusions listed below: 1. 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. 2. Inconclusive: Could not be Identified or Eliminated. Due to possible changes in firearm operating surfaces from wear, corrosion, and ordinary fouling and differences in ammunition, cartridge cases and projectiles fired in the same firearm are sometimes not identifiable as such. 3. Eliminated: Significant disagreement of discernible class characteristics and/or individual characteristics leading to the conclusion that the items were not fired in/from that same firearm. 4. No Value/Unsuitable for Microscopic comparison: The item lacks individual characteristics for microscopic comparison. This might also include items that did not come from ammunition or ammunition components. When applicable, all NIBIN correlations and leads were viewed and/or generated by the ATF Correlation Center.</p>
UT8N6Y	<p>The fired bullet, item 5, was microscopically identified as having been fired from the same firearm that fired the test fired bullets, item 1. The fired bullets, items 2 and 3, were microscopically compared to the test fired bullets, item 1. They were found to have the same class characteristics, but some disagreement between individual characteristics was noted. However, the observed disagreement is not sufficient for elimination and the results of the comparison are inconclusive. The fired bullet, item 4, was eliminated from having been fired from the same firearm that fired the test fired bullets, item 1.</p>
UU694E	<p>The bullet Item 5 was fired by the same firearm from which the bullets fired using the recovered firearm Item 1. The bullets Item 2 and 3 were fired by the same firearm, but different from that of Item 1. The bullet Item 4 was fired by a firearm different from that of Item 1 and different from that firing the bullets of items 2 and 3.</p>
VB8TC9	<p>Items 1—5 Microscopic examination and comparison of the bullets revealed the following results: Items 2 and 3 were identified as having been fired from the same firearm; however, they were eliminated as having been fired from the same firearms as Items 1, 4 and 5. Item 4 was eliminated as having been fired from the same firearm as Items 1 and 5. Item 5 was identified as having been fired from the same firearm as Item 1.</p>
VCZT8X	<p>The recovered questioned bullets identified "Item 2", "Item 3" and "Item 4" were not fired in the same firearm as the known bullets (Item 1). The recovered questioned bullets identified "Items 5" were fired in the same firearm as the known bullets (Item 1)</p>
VP7WHK	<p>Comparison microscope examinations were conducted on the evidence listed above. The findings of this examiner are the following: 1- Exhibits 2 and 3 were fired in the same 9mm caliber firearm based on sufficient agreement of individual characteristics. 2- Exhibits 2 and 3 were eliminated as being fired in Exhibit 1 based on differences of individual characteristics. 3- Exhibit 4 was eliminated as being fired from the same firearm used to fire Exhibits 2, 3 and 5 based on differences in class. 4- Exhibit 5 was fired in Exhibit 1 based on sufficient agreement of individual characteristics. Exhibits 2 through 5 are fired bullets that are consistent with a .38 caliber class projectile normally loaded in a 9mm caliber cartridge. The following is an investigative lead only and not intended to exclude all other makes of firearms. Based on class characteristics of Exhibits 2 and 3, the possible firearms include 9mm caliber Sccy type pistols. The following is an investigative lead only and not intended to exclude all other makes of firearms. Based on class characteristics of Exhibit 4, the possible firearms includes 9mm caliber</p>

TABLE 2

WebCode	Conclusions
	Smith & Wesson pistols and Ruger revolvers. Only those items discussed in the results above were examined for this report. This report represents the opinions and interpretations of the undersigned analyst.
VYX9UZ	Examinations showed that Item 2, Item 3, and Item 4, were not discharged from the same firearm as the known bullets (Item 1). Examinations showed that Item 5, was discharged from the same firearm as the known bullets (Item 1).
VZL4KA	Item 1 are test-fired bullets from a 9mm Luger (9x19mm) SCCY pistol, Model CPX-2. The Item 5 bullet was identified as having been fired from the barrel of the Item 1 pistol. Due to a lack of sufficient corresponding microscopic marks of value, no conclusion could be reached as to whether the Item 2 and Item 3 bullets were fired from the barrel of the Item 1 pistol. Item 2 and Item 3 are .38 caliber family (9mm) full metal jacket bullets that were fired from a barrel rifled with seven grooves, right twist. The Item 2 and Item 3 bullets were identified as having been fired from the same barrel. A check of the [Laboratory's] General Rifling Characteristics (GRC) database produced a list of firearms with similar GRCs like those present on the Item 2 and Item 3 bullets and includes pistols marketed by SCCY. Item 4 is .38 caliber family (9mm) full metal jacket bullet that was fired from a barrel rifled with five grooves, right twist. Due to a difference in class characteristics (GRC), the Item 4 bullet was eliminated as having been fired from the barrel of the Item 1 pistol (which includes Item 5) and the barrel that fired the Item 2 and Item 3 bullets. A check of the [Laboratory's] GRC database produced a list of firearms with similar GRCs like those present on the Item 4 bullet and includes pistols marketed by Smith & Wesson.
VZLV3U	Based on the agreement of class characteristics, the items 1, 2, 3, and 5 bullets were microscopically compared to each other. These projectiles are 9mm caliber exhibiting conventional style rifling characteristics consisting of seven land and groove impressions with a right twist. The item 5 bullet was identified as having been fired by the same firearm that was used to fire the item 1 bullets based on the sufficient agreement of individual characteristics. Based on significant differences of individual characteristics, the items 2 and 3 bullets were eliminated as having been fired by the same firearm used to fire the items 1 and 5 bullets. Based on the agreement of class characteristics, the items 2 and 3 bullets were microscopically compared to each other. Both fired bullets were identified as having been fired by the same unknown firearm based on the sufficient agreement of individual characteristics. Firearms with the same general rifling characteristics include, but are not limited to, SCCY Industries brand firearms. Based on class characteristic differences (rifling), the item 4 bullet was not fired by the same firearm used to discharge the items 1, 2, 3, and 5 bullets. Item 4 is a 9mm caliber fired projectile exhibiting conventional style rifling characteristics consisting of five land and groove impressions with a right twist. Firearms with the same general rifling characteristics include, but are not limited to, Smith & Wesson brand firearms.
VZMLDJ	The projectiles in Items 2 and 3 bear class characteristics consistent with those observed on the projectiles in Item 1. However, due to insufficient reproducible individual characteristics, the projectiles in Items 2 and 3 could not be positively included or excluded as being fired in the same gun as the projectiles in Item 1. The projectile in Item 4 was not fired in the same gun that fired the projectiles in Item 1, based on differences observed in class characteristics. The projectile in Item 5 was fired in the same gun that fired the projectiles in Item 1, based on agreement observed in individual characteristics.
W9EXVD	The fired bullets submitted as items 2, 3, and 5 were microscopically compared to each other and to the said test fired bullets submitted as item 1 and it was determined that: The one bullet submitted as item 5 was fired from the same firearm that fired the bullets submitted as Item 1. The fired bullets 2 and 3 were fired the other firearm but not from the firearm that fired Item

TABLE 2

WebCode	Conclusions
	1. The fired bullet submitted as Item 4 was fired the other firearm but not from the firearms that fired Item 1 and different from that firing the bullets of items 2 and 3.
WB4NEB	The Items 01-01 and 01-05 copper jacketed bullets were identified as having been fired from the same unknown firearm, which is reportedly a 9mm Luger caliber SCCY pistol, Model CPX-2, serial number unknown. The Items 01-02 and 01-03 copper jacketed bullets were identified as having been fired from the same unknown firearm. The Items 01-02 and 01-03 copper jacketed bullets were unable to be identified or eliminated as having been fired from the same firearm as the Items 01-01 and 01-05 copper jacketed bullets due to a lack of reproducible marks. The Item 01-04 copper jacketed bullet was eliminated as having been fired from the same firearm(s) as the Items 01-01, 01-02, 01-03, and 01-05 copper jacketed bullets. The Item 01-04 copper jacketed bullet is a 38 caliber class bullet and was fired from an unknown firearm with five conventionally rifled lands and grooves inclined to the right. A caliber within the 38 caliber class includes, but is not limited to, 9mm Luger. Possible manufacturers of the unknown firearm that fired this bullet include, but are not limited to, Ruger and Smith & Wesson.
WE4Y9P	1) Exhibits 1 (Three 9mm Metal Jacketed Bullets), 2 (One 9mm Metal Jacketed Bullet), 3 (One 9mm Metal Jacketed Bullet), 4 (One 9mm Metal Jacketed Bullet), and 5 (One 9mm Metal Jacketed Bullet) were visually examined and microscopically compared to each other. a) It was concluded that the Exhibits 1 and 5 bullets were fired from the same firearm based on an agreement of class characteristics and a sufficient agreement of individual characteristics. b) It was concluded that the Exhibits 2 and 3 bullets were fired from the same firearm based on an agreement of class characteristics and a sufficient agreement of individual characteristics. Exhibits 2 and 3 are consistent with having been fired from the following list of firearms: SCCY Industries 9mm pistols. The above list is not all inclusive. c) It was concluded that the Exhibits 1 and 5 bullets were not fired from the same firearm as the Exhibits 2 and 3 bullets based on an agreement of class characteristics and a sufficient disagreement of individual characteristics. Observing this amount of disagreement from the same source is considered extremely remote. d) The Exhibit 4 bullet was not fired from the same firearms that fired Exhibits 1 and 5 or Exhibits 2 and 3 based on a disagreement of class characteristics. Exhibit 4 is consistent with having been fired from the following list of firearms: Smith & Wesson 9mm pistols. The above list is not all inclusive.
WG87F4	As result of microscopic comparisons it was established that: 1.) Bullet recovered item 5 was fired in the suspect's weapon Item 1. 2.) Bullets Recovered Items 2 and 3 were fired the same firearm, different from that of suspect's and different from the firearm that fired bullet Item 4. 3.) Bullet recoverd 4 was fired using the other firearms from that of suspect's and different from the firearm thet bullets 2 and 3.
WJGLXN	Item 1 contains three (3) test fired 9mm caliber bullets with seven land and groove impressions and right twist. Item 5 is one (1) fired 9mm caliber bullet with seven land and groove impressions and right twist. Based on the agreement of class characteristics, these bullets were microscopically compared. Item 5 was identified as having been fired from the same firearm as the test fired bullets from Item 1 based on the sufficient agreement of individual characteristics. Items 2 and 3 are two (2) fired 9mm caliber bullets with seven land and groove impressions and right twist. Based on the agreement of class characteristics, these bullets were microscopically compared. Items 2 and 3 were identified as having been fired from the same unknown firearm based on the sufficient agreement of individual characteristics. Possible firearms that may have fired Items 2 and 3 include 9mm caliber firearms manufactured by SCCY Industries. Based on agreement of class characteristics, Items 2 and 3 were microscopically compared to Items 1 and 5. Items 2 and 3 could not have been fired in the

TABLE 2

WebCode	Conclusions
	<p>same firearm as Items 1 and 5 based on the significant disagreement of individual characteristics. Item 4 is one (1) fired 9mm caliber bullet with five land and groove impressions and right twist. Item 4 could not have been fired from the same firearm as Items 1 and 5, or from the same unknown firearm as Items 2 and 3, based on the significant disagreement of class characteristics. Possible firearms that may have fired Item 4 include, but are not limited, to 9mm caliber firearms manufactured by Fabrique Nationale, IML, Ruger, and Smith and Wesson.</p>
WQJRTJ	<p>Item 1 was identified, within the limits of practical certainty*, as having been fired from the same firearm barrel as Item 5. Item 1 was fired by a 9x19 mm calibre SCCY model CPX-2 pistol. Item 1 was not fired from the same firearm barrel as Item 2. Item 2 was identified, within the limits of practical certainty¹, as having been fired from the same firearm barrel as Item 3. Item 4 was not fired from the same firearm barrel as Item 1, 2, 3 or 5.</p>
X8LQKT	<p>Item 1 (three bullets said to be fired from an SCCY Model CPX-2 9mm Luger caliber pistol) and Item 5 (a bullet) were identified* as having been fired by the same firearm. Items 2, 3 and 4 (three bullets) were fired by a different firearm than Item 1. Items 2 and 3 were identified* as having been fired by the same firearm. Items 2 and 3 were fired by a different firearm than Item 4. Items 2, 3 and 4 are .38 caliber bullets of the weight and style typically loaded in 9mm Luger caliber cartridges. Examinations of Item 3 showed it to be consistent with having been fired from a firearm with seven lands and grooves with a right twist. Firearms with this rifling pattern include, but are not limited to, those manufactured under the brand name SCCY or SKYY Industries. Examinations of Item 4 showed it to be consistent with having been fired from a firearm with five lands and grooves with a right twist. Firearms with this rifling pattern include, but are not limited to, those manufactured under the brand name Smith & Wesson or Ruger. *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.</p>
X9EKDG	<p>Bullet Analysis: Methodology: Physical (Visual Examination), Electronic Balance/Caliper/Digital Micrometer, Microscopy (Comparison Microscope). Items 2, 3, 4, and 5 are 38 caliber class bullets based upon the diameter. Items 2 and 3, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the bullets, were not fired through the barrel of the same firearm as Item 4, the bullet, based upon different class characteristics. Item 5, the bullet, was fired through the barrel of Item 1, the SCCY pistol, based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the bullets, were not fired through the barrel of Item 1, the SCCY pistol, based upon different individual microscopic characteristics. Item 4, the bullet, was not fired through the barrel of Item 1, the SCCY pistol, 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 2 and 3, the bullets, exhibit characteristics found in (but not limited to) the following firearms: caliber 9mm Luger- SCCY Industries and SKYY Industries. Item 4, the bullet, exhibits characteristics found in (but not limited to) the following firearms: caliber 9mm Luger- Fabrique Nationale, Ruger, and Smith & Wesson.</p>
XCQQEV	<p>A microscopic examination and conclusion of items #2 through #5 to the test bullets fired from the known submitted 9mm SCCY Pistol revealed the following: Item #5 displayed sufficient agreement of individual characteristics to conclude it had been fired from item #1, the SCCY Pistol. Items #2 and #3 displayed sufficient agreement of individual characteristics to conclude they had both been fired from one other gun, a second gun. Examination of Item #04 revealed it had been fired from one other gun, a third gun.</p>

TABLE 2

WebCode	Conclusions
XKNFWK	Item 1, consisting of three (3) caliber 9mm Luger bullets, and Items 2, 3, 4, and 5, each a caliber 9mm Luger bullet, were examined and analyzed using microscopy. The Item 1 and 5 bullets were identified as having been fired from the same firearm. The Item 2 and 3 bullets were identified as having been fired from the same firearm. Items 2 and 3 were eliminated as having been fired from the same firearm as the Item 1 and 5 bullets due to sufficient differences in individual characteristics. Firearms that produce general rifling class characteristics like those present on Items 2 and 3 include SCCY Industries pistols chambered to fire caliber 9mm Luger cartridges. This list is not all encompassing; it is possible another brand of firearm produced these class characteristics and is not listed due to the content of the databases searched. The Item 4 bullet was eliminated as having been fired from the same firearm as Items 1, 2, 3, and 5 due to differences in class characteristics. Item 4 was found to exhibit markings that may be suitable for identification with the firearm from which it was fired. Firearms that produce general rifling class characteristics like those present on Item 4 include Smith & Wesson pistols chambered to fire caliber 9mm Luger cartridges. This list is not all encompassing; it is possible another brand of firearm produced these class characteristics and is not listed due to the content of the databases searched.
XNLT2X	Examinations showed that Item 2, Item 3 and Item 4, were not discharged from the same firearm as the known bullets (Item 1). Examinations showed that Item 5, was discharged from the same firearm as the known bullets (Item 1).
XNY2TR	First: The 9 mm caliber bullet problem (questioned bullet), described as Item 5, was fired by the pistol firearm, 9 mm caliber, SCCY brand, model CPX-2, from which was obtained the ballistic testing elements (known bullets) identified as item 1. Second: The bullets' problem identified as item 2 and 3 were fired by the same firearm, but different from the one where the ballistic testing elements (item 1) were obtained, as well as the ones that fired the bullets identified as items 4 and 5. Third: The bullet problem described as item 4 was fired by a different firearm from the one where the test-bullets (item 1) were obtained, as well as those that fired the bullets problem identified as items 2, 3 and 5. Fourth: It was possible to identify three firearms, just as the ones that fired the bullets, described in the current expert's report.
XTFU2Q	IDENTIFICATION: The following items were compared and were found to show the presence of matching features: Items 1 and 5. IDENTIFICATION: The following items were compared and were found to show the presence of matching features: Items 2 and 3. ELIMINATION: The Item 4 fired bullet was eliminated as having been fired in the same firearm as the Item 1 test fired bullets and the Items 2-5 fired bullets. ELIMINATION: The Items 2 and 3 bullets were eliminated as having been fired in the same firearm as the Item 1 test fired bullets and the Item 5 fired bullet.
XUU2KM	Item #5 bullet was compared microscopically to Item #1 test bullets. Based on the agreement of all discernible class characteristics and sufficient agreement of corresponding individual characteristics, Item #5 has been identified as having been fired from the same firearm as Item #1 test bullets. Item #1 tests have been compared microscopically to Items #2 & #3. There is agreement of all discernible class characteristics. However, there is a sufficient disagreement of individual characteristics for elimination. Items #2 & #3 are eliminated as having been fired from the same firearm as Item #1 test bullets. Items #2 & #3 were compared microscopically to each other. Based on the agreement of all discernible class characteristics and sufficient agreement of corresponding individual characteristics, these bullets have been identified as having been fired from the same firearm. Based on differences in class characteristics, Item #4 bullet is eliminated as having been fired in the same firearm as Item #1 test bullets and Items #2, #3, & #5.
XWZQJP	1. The bullets corresponding in item 1 and item 5 are 9 mm caliber, with rifling to the

TABLE 2

WebCode	Conclusions
	right(R-7)and were fired by the same firearm (Identification). 2. The bullets corresponding in item 2 and item 3 are 9 mm caliber, with rifling to the right (R-7)and were fired by the same firearm (Identification). 3. The bullet described in item 4, is 9 mm caliber with rifling to the right(R-5)and was fired by a firearm, was not fired by the firearm used to fired the bullets described in items 1 and 5; and also was not fired by the firearm used to fired the bullets corresponding to item 2 and item 3.
XXXRV9	One bullet (Item 5) was fired by the same firearm as the test fires reportedly fired by the SCCY pistol (Item 1). One bullet (Item 4) was not fired by the same firearm as the test fires reportedly fired by the SCCY pistol (Item 1) or the other three bullets (Items 2, 3, 5). They have different class characteristics. Two bullets (Items 2 and 3) were fired by the same firearm; however, the two bullets were not identified or eliminated as being fired by the same firearm as the test fires reportedly fired by the SCCY pistol (Item 1). There is an agreement of discernable class characteristics and a lack of agreement or disagreement in the individual characteristics and pattern areas.
XZ2MCQ	Item 5 (a bullet) was identified* as having been fired from the same firearm as Item 1 (said to be test fired bullets from a SCCY Model CPX-2 9mm Luger caliber pistol). Items 2 through 4 (three bullets) were not fired from the same firearm as Item 1. Items 2 and 3 were identified* as having been fired by the same firearm. Examinations of Item 2 showed it to be consistent with bullets typically loaded in 9mm Luger caliber cartridges and fired from a firearm with seven lands and grooves with a right twist. Firearms with this rifling pattern include, but are not limited to, those manufactured under the brand names SCCY, or Skyy Industries. Examinations of Item 4 showed it to be consistent with a .38 caliber bullet fired from a 9mm Luger caliber firearm with five lands and grooves with a right twist. Firearms with this rifling pattern include, but are not limited to, those manufactured under the brand names Fabrique Nationale, Ruger, or Smith & Wesson. *Source Identification is reached when the discernable class and individual characteristics have corresponding detail and the examiner would not expect to see the same arrangement of details repeated in another source.
Y6EVAE	Bullet Analysis: Methodology: Physical (Visual Examination), Electronic Balance/Digital Caliper/Digital Micrometer, Microscopy (Comparison Microscope). Items 1, 2, 3, 4, and 5 are 38 caliber class bullets based upon the diameter. Item 5, the bullet, was fired through the barrel of Item 1, the SCCY pistol, based upon corresponding class and individual microscopic characteristics. Items 2 and 3, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics. Item 4, the bullet, was not fired through the barrel of Item 1, the SCCY pistol, based upon different class characteristics. Items 2, 3, and 5, the bullets, were not fired through the barrel of the same firearm as Item 4, the bullet, based upon different class characteristics. Items 2 and 3, the bullets, were not fired through the barrel of Item 1, the SCCY pistol, based upon different individual microscopic characteristics. Opinion/Interpretation: Items 1, 2, 3, 4, and 5 are consistent with bullets loaded in 9mm Luger caliber cartridges based upon the weight and style. Items 2 and 3 exhibit characteristics found in (but not limited to) the following firearms: SCCY Industries (SKYY) 9mm Luger caliber firearms. Item 4 exhibits characteristics found in (but not limited to) the following firearms: Fabrique Nationale, Ruger, and Smith & Wesson 9mm Luger caliber firearms.
Y9P2BT	Items 1, 2, 3, and 5 fired bullets are 9mm caliber fired bullets that were fired by a firearm having conventional style rifling consisting of seven lands and grooves with right twist. Common firearms with the same(or that produce the same)class characteristics include models produced by: SCCY/SKYY models CPX-1 and CPX-2. This is not an all-inclusive list; therefore, all 9mm caliber firearms recovered during the course of this investigation should be submitted

TABLE 2

WebCode	Conclusions
	<p>along with the above listed fired evidence. Items 1, 2, 3 and 5 fired bullets were microscopically compared to each other based on agreement of class characteristics. Items 1 and 5 fired bullets were identified as having been fired by the same firearm due to sufficient agreement of individual characteristics. Items 2 and 3 fired bullets were identified as having been fired by the same firearm due to sufficient agreement of individual characteristics. Items 2 and 3 were fired from a different firearm than Items 1 and 5 due to agreement of class characteristics but differences in individual characteristics. Item 4 fired bullet is a 9mm caliber fired bullet that was fired by a firearm having conventional style rifling consisting of five lands and grooves with right twist. Common firearms with the same(or that produce the same)class characteristics include models produced by: Fabrique Nationale, Ruger and Smith & Wesson. This is not an all-inclusive list; therefore, all 9mm caliber firearms recovered during the course of this investigation should be submitted along with the above listed fired evidence. Based on differences in class characteristics, the Item 4 fired bullet was eliminated from being fired by either of the firearms that fired Items 1 and 5 fired bullets and/or Items 2 and 3 fired bullets. The significance of these identifications is made to the practical, not absolute, exclusion of all other firearms.</p>
YR3NXM	<p>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 calibre and with the same class characteristics as the submitted firearm. The likelihood ratio (LR) of the findings is expressed in the following verbal scale: Approximately equally probable (LR = 1-2), Slightly more probable (LR = 2-10), More probable (LR = 10-100), Much more probable (LR = 100-10,000), Very much more probable (LR = 10,000-1,000,000), Extremely more probable (LR = >1,000,000). Conclusions: Item 2: The findings are at least very much more probable when H2 is true than when H1 is true. Item 3: The findings are at least very much more probable when H2 is true than when H1 is true. Item 4: The class characteristics in Item 4 differ from those in Item 1. Due to this difference the bullet Item 4 cannot have been be fired by the same firearm as the test fired bullets Item 1. Item 5: The findings are extremely more probable when H1 is true than when H2 is true.</p>
YV4KQ3	<p>The results of analysis completed on DATE are as follows: Item 5 was fired in the same firearm as Item 1 (identification). This is also the opinion of Firearms Examiner NAME. Items 2 and 3 could not be identified or eliminated as having been fired in the same firearm as Item 1 (inconclusive). This is also the opinion of Firearms Examiner NAME. Items 2 and 3 were fired in the same firearm (identification). This is also the opinion of Firearms Examiner NAME. Items 2 and 3 are consistent with the 38 caliber family, which includes 9mm Luger. In addition to the firearm that created Item 1, Items 2 and 3 could have been fired in a 9mm Luger firearm produced or marketed by manufacturers listed in Appendix 01. Item 4 was not fired in the same firearm as Item 1 (elimination). This is also the opinion of Firearms Examiner NAME. Item 4 was not fired in the same firearm as Items 2 and 3 (elimination). This is also the opinion of Firearms Examiner NAME. Item 4 is consistent with the 38 caliber family, which includes 9mm Luger. Item 4 could have been fired in a 9mm Luger firearm produced or marketed by manufacturers listed in Appendix 02. For additional clarification regarding conclusion statements, please contact the Firearms Section or go to [Website].</p>
Z3F786	<p>Items 2, 3, 4, and 5 have physical and design characteristics consistent with being .38/.357/9mm caliber. Items 1 (test fired bullets) and 5 were microscopically examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, Item 5 was identified as having been fired from the same firearm that fired Item 1 (the SCCY CPX-2 semiautomatic pistol). Items 2 and 3 were microscopically</p>

TABLE 2

WebCode	Conclusions
	<p>examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, Items 2 and 3 were identified as having been fired from the same firearm. Items 2 and 3 were microscopically examined and compared to Items 1 (test fired bullets) and 5. Agreement of class characteristics was observed. However, there is insufficient agreement or disagreement of individual characteristics to either identify or eliminate Items 2 and 3 as having been fired from the same firearm as 1 and 5 (the SCCY CPX-2 semiautomatic pistol). Items 1 (test fired bullets), 2, 3, 4, and 5 were microscopically examined. Based on observed disagreement of class characteristics, Item 4 was eliminated as having been fired from the same firearm(s) as Items 1 and 5 (the SCCY CPX-2 semiautomatic pistol), 2, and 3. 9mm Luger semiautomatic firearms that could have fired Items 2 and 3 include the following: SCCY Industries, SKYY Industries. NOTE: This list should not be considered all-inclusive of all makes and/or models of firearms that could have possibly fired the listed bullets. 9mm Luger semiautomatic firearms that could have fired Item 4 include the following: Fabrique Nationale, Smith & Wesson. 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.</p>
Z7G6KH	See Attached Report [Attachment not provided by participant]
ZAGFGH	(See attached report) [Attachment not provided by participant]
ZCLKW8	<p>Item 5 was microscopically compared to Item 1 and was identified as having been fired from the same firearm barrel as Item 1 due to the correspondence of all discernible class characteristics and sufficient agreement of individual characteristics. Item 4 was microscopically compared to Item 1 and was eliminated as having been fired from the same firearm barrel as Item 1 due to the disagreement of discernible class characteristics. Item 4 is a 38 caliber-class copper-jacketed bullet fired from a firearm with a conventional rifling pattern of five lands and grooves with a right twist. The size, weight, and configuration of Item 4 are most consistent with bullets typically used in 9mm Luger ammunition. The class characteristics of Item 4 were searched through a General Rifling Characteristics (GRC) database to generate a list of firearms that could have fired Item 4. Among the more common firearms that could have fired Item 4, include, but are not limited to, the following: Fabrique Nationale and Smith & Wesson brands of 9mm Luger semi-automatic pistols. This list is not meant to be all-inclusive, but rather an investigative aid. 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 record. Item 2 and Item 3 were microscopically compared to Item 1 and were eliminated as having been fired from the same firearm barrel as Item 1 due to sufficient disagreement of individual characteristics. Item 2 and 3 were microscopically compared to each other and were identified as having been fired from the same unknown firearm barrel due to the correspondence of all discernible class characteristics and sufficient agreement of individual characteristics. Item 2 and Item 3 are 38 caliber-class copper-jacketed bullets fired from a firearm with a conventional rifling pattern of seven lands and grooves with a right twist. The size, weight, and configuration of Item 2 and Item 3 are most consistent with bullets typically used in 9mm Luger ammunition. The class characteristics of Item 2 and Item 3 were searched through a General Rifling Characteristics (GRC) database to generate a list of firearms that could have fired these items. Among the more common firearms that could have fired Item 2 and Item 3, include, but are not limited to, the following: SCCY brand of 9mm Luger semi-automatic pistols. This list is not meant to be all-inclusive, but rather an investigative aid. 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 record.</p>
ZEMNNU	The Item 5 bullet was identified as having been fired from the barrel of the Item 1 pistol. The

TABLE 2

WebCode	Conclusions
	<p>Item 2 and Item 3 bullets were identified as having been fired from the barrel of the same firearm. Due to a lack of sufficient corresponding microscopic marks of value, no conclusion could be reached as to whether the Item 2 and 3 bullets were fired from the barrel of the Item 1 pistol. Item 2 and 3 are .38 caliber/9mm Luger full metal jacket bullets that were fired from a barrel rifled with seven grooves, right twist. A check of the [Laboratory's] General Rifling Characteristics (GRC) database produced a list of firearms with GRCs like those present on the Item 2 and 3 bullets that include pistols marketed by SCCY. Due to a difference in class characteristics, the Item 4 bullet was excluded as having been fired from the barrel of the Item 1 pistol or the same firearm as the Item 2 and 3 bullets. Item 4 is a .38 caliber/9mm full metal jacket bullet that was fired from a barrel rifled with five grooves, right twist. A check of the [Laboratory's] General Rifling Characteristics (GRC) database produced a list of firearms with GRCs like those present on the Item bullet that includes pistols marketed by Smith & Wesson.</p>
ZGWYXW	<p>MICROSCOPIC COMPARISONS OF EVIDENCE 9mm BULLETS Q1B THROUGH Q4B (ITEMS 2-5) AGAINST EACH OTHER AND TEST FIRED BULLET SPECIMENS FROM K1 SCCY SUSPECT FIREARM (ITEM 1) REVEALS THAT SUFFICIENT AGREEMENT OF INDIVIDUAL CHARACTERISTICS EXISTS TO IDENTIFY THE FOLLOWING: EVIDENCE 9mm BULLET Q4B (ITEM 5) WAS FIRED WITH K1 SCCY SUSPECT FIREARM (ITEM 1). EVIDENCE 9mm BULLETS Q1B AND Q2B (ITEMS 2 AND 3) WERE FIRED WITH THE SAME UNKNOWN FIREARM. Q1B AND Q2B (ITEMS 2 AND 3) WERE NOT FIRED WITH K1 SCCY SUSPECT FIREARM (ITEM 1) DUE TO DIFFERENCES IN INDIVIDUAL MARKINGS PRESENT. Q3B (ITEM 4) WAS NOT FIRED WITH THE SAME FIREARM AS Q1B AND Q2B OR WITH K1 SCCY SUSPECT FIREARM (ITEMS 2, 3 AND 1) DUE TO DIFFERENCES IN RIFLING CLASS CHARACTERISTICS PRESENT (06R VS 05R). SHOULD ANOTHER SUSPECT FIREARM BE RECOVERED PLEASE SUBMIT IT IN REFERENCE TO THE ABOVE CC#.</p>
ZHQP3Q	<p>Before the examination the bullets which were fired from the barrel of the suspects firearm were marked V1 – V3 (item 1). The bullets recovered at the crime scene and by the medical examiner were marked accordingly T1 (item 2), T2 (item 3), T3 (item 4), T4 (item 5). Comparisons were conducted using the Leica FSC comparison microscope and the ballistic identification system "balscan". As a result of these examinations, the following conclusions were reached: 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. The bullets marked T1, T2 and T4 bear the same class characteristics as the bullets marked V1 – V3 (caliber 9 mm Luger, six lands and grooves with a right hand twist). Because of clear differences in the observed individual characteristics, the chance that the bullets T1 – T3 were fired from the suspects handgun is considered virtually non existent. Based upon the observed similarities of individual characteristics (striated Marks) is concluded the bullet T4 was fired from the suspect`s firearm.</p>
ZNJUVU	<p>Based on the comparison of discernible class characteristics and individual characteristics within the land impressions: (a) The bullet marked "Item 5" was fired in the same firearm as that which fired "Item 1". (b) The bullets marked "Item 2", "Item 3" and "Item 4" were not fired in the same firearm as that which fired "Item 1".</p>
ZNKHHZ	<p>Item 5 was 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 2 and 3 were microscopically eliminated as having been fired from the same firearm that fired the test fires, Item 1, due to disagreement of individual characteristics. Items 2 and 3 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. Item 4 was microscopically eliminated as having been</p>

TABLE 2

WebCode	Conclusions
ZTDLAJ	fired from the same firearm that fired the test fires, Item 1, and the from the same unknown firearm as Items 2 and 3 due to disagreement of discernible class characteristics.
ZVHD9B	Projectile D (Item 5) was fired in the 9mm SCCY pistol, model CPX-2, serial number unknown. Projectiles A and B (Items 2 and 3) were fired in a second 9mm pistol. Suspect weapons include 9mm SCCY pistols; however, any suspect weapon should be submitted for examination. Projectile C (Item 4) was fired in a third 9mm pistol. Suspect weapons include 9mm Smith and Wesson pistols; however, any suspect weapon should be submitted for examination.
ZVHD9B	The fired bullets from items 1 and 5 were each fired from the same firearm. The fired bullets from items 2 and 3 were both fired from the same firearm; a different firearm than the source of items 1 and 5. Item 4 was fired from a different firearm than either source firearms for items 1, 2, 3, and 5.
ZZD2YQ	Item 1.1 consists of three fired 9mm caliber bullets stated to have been fired by a SSCY CPX -2 handgun. Items 1.2, 1.3 and 1.5 are three fired 9mm caliber bullets having seven land and groove impressions with a right twist. They were microscopically compared to Item 1.1 and each other. The results are as follows: Based on agreement of all discernable class characteristics and sufficient corresponding individual detail in the land impressions, Items 1.1 and 1.5 were identified as having been fired by the same firearm. Based on agreement of all discernable class characteristics and sufficient corresponding individual detail in the land impressions, Items 1.2 and 1.3 were identified as having been fired by the same firearm. Based on disagreement in the individual detail in the land impressions, Items 1.2 and 1.3 were eliminated as having been fired by the same firearm that fired Items 1.1 and 1.5. Item 1.4 is one fired 9mm caliber bullet having five land and groove impressions with a right twist. Based on disagreement of class characteristics, Item 1.4 was eliminated as having been fired by the same firearms that fired Items 1.1, 1.2, 1.3 and 1.5.

Additional Comments

TABLE 3

WebCode	Additional Comments
26262T	SHOULD ANY ADDITIONAL FIREARMS BE RECOVERED, SUBMIT, AND REFER TO THE ABOVE CASE#. "Sufficient agreement" exists between two toolmarks means that the agreement is of a quantity and quality that the likelihood another tool could have made the mark is so remote as to be considered a practical impossibility. Sufficient agreement is related to the significant duplication of random toolmarks as evidenced by a pattern or combination of patterns of surface contours.
2EQWP8	Due to differences in GRC, Item 01-04 (5 lands and grooves) was eliminated as having been fired from the same firearm(s) as Items 01-01, 01-02, 01-03, and 01-05 (7 lands and grooves). Items 01-02 and 01-03 were microscopically compared to Items 01-01 and 01-05. Similar class characteristics were noted (GRC, caliber, and groove/land width dimensions). Some differences were also noted. Good striated marks that travelled down the bearing surface were observed on the bullet grooves and good striated marks were observed on the lands of Items 01-01 and 01-05 that were not observed on Items 01-02 and 01-03; however, the differences were not sufficient for elimination. Due to the lack of agreement or disagreement of individual characteristics, Items 01-02 and 01-03 were unable to be identified or eliminated as having been fired from the same firearm as Items 01-01 and 01-05.
3FTTEM	The bullet of item 04 has a class characteristics different from the other bullets(05 LEAs/ 07 LEAs).
3K7WG4	Item 1 and 2 had agreement of all discernible class characteristics and disagreement of individual characteristics, but insufficient for an elimination. Item 1 and 3 had agreement of all discernible class characteristics and disagreement of individual characteristics, but insufficient for an elimination.
3N7EAP	The bullet identified as ITEM 2 and the bullet identified ITEM 3 recovered from the road at the scene were fired by the same firearm, but a different than the one identified as ITEM 4.
3PQRFF	Items 2 and 3 are inconclusive due to an agreement of all discernible class characteristics, and some disagreement of individual characteristics, but insufficient for an elimination.
66PGWQ	Items 2 and 3 were fired from the same unknown firearm based on corresponding discernable class and individual characteristics (Identification). Items 2 and 3 could neither be identified or eliminated as having been fired from Item 1 (Item 5) due to agreement of class characteristics, but insufficient corresponding individual characteristics (Inconclusive).
69QR2J	1. Identification: Based on the agreement of the individual characteristics observed through the microscopic comparison test.
6GMHQZ	Insufficient agreement or disagreement of individual characteristics observed to either identify or eliminate Items 2 and 3 as having been fired from the same firearm that fired Items 1 (the SCCY semiautomatic pistol) and 5. Very few areas of random agreement of individual characteristics noted between Items 2 and 1 and 5, areas of disagreement were noted however. Very few areas of random agreement of individual characteristics noted between Items 3 and 1 and 5, areas of disagreement were noted however. Test fired bullets were reproducing well and areas of agreement between Items 1 and 5 were reproducing well. There is no indication that Items 2 and 3 were fired in the same firearm as Items 1 and 5. This

TABLE 3

WebCode	Additional Comments
	laboratory does not routinely eliminate based on individual characteristics and is considered only in exceptional circumstances on a case by case basis.
6K6MWB	1 Practical Certainty: Since it is not possible to collect and examine samples of all firearms, it is not possible to make an identification with absolute certainty. However all scientific research and testing to date and the continuous inability to disprove the principles of toolmark analysis have demonstrated that firearms produce unique, identifiable characteristics which allow examiners to reliably make identifications. Firearms/Toolmark Identification is an empirical science that relies on objective observations and a subjective interpretation of microscopic marks of value.
8TM2E6	Item 4 excluded on class characteristics, Items 2, 3 and 5 excluded on disagreement of the individual characteristics.
8TM2GQ	Item 2 and item 3 were fired from another same firearm B. Item 4 was fired from another firearm C
9A99MM	GRC and caliber determination would also be included in a laboratory report: Item 4 fired bullet was determined to be 38/9mm Luger caliber class bullet which was fired through a firearm having a rifling system of five lands and grooves with a right twist. Item 4 is consistent in size, weight and style with bullets commonly loaded in 9mm Luger cartridges. Firearms with a similar rifling system include but are not limited to the following: Smith and Wesson semiautomatic pistols as well as Smith and Wesson and Ruger 9mm Luger revolvers. This list is not all-inclusive and should not be used to eliminate any suspect firearm of similar caliber and class characteristics. Item 2 and 3 were determined to be 38/9 mm Luger caliber class bullet which was fired through a firearm having a rifling system of seven lands and grooves with a right twist. Item 2 and 3 are consistent in size, weight and style with bullets commonly loaded in 9mm Luger cartridges. Firearms with a similar rifling system include but are not limited to the following: SCCY and SKYY Industries 9mm Luger semiautomatic pistols. This list is not all-inclusive and should not be used to eliminate any suspect firearm of similar caliber and class characteristics.
9L4DZU	The bullets in Items 2 & 3 bear sufficient agreement of individual characteristics to determine that they had been fired in the same firearm as one another; however, there is not sufficient agreement of the individual characteristics to provide a conclusive determination as to whether Items 2 & 3 were fired in the same firearm as Items 1 & 5.
9PMCB4	The inconclusive conclusion is based on a lack of agreeing individual characteristics; however, available class characteristics and some individual characteristics are similar so therefore, these items could not be eliminated nor identified to one another.
AYNY3Z	The characteristic marks on recovered bullet (Item 2) to be similar to the characteristic marks on the recovered bullet (Item 3). Hence, I am of the opinion that the recovered bullets Item 2 and Item 3 were fired by the same firearms.
BJ7TYE	item 4 was eliminated due to no similar class/ individual characteristics with other items.
BRZ9YY	Bullets which called Item (2,3 and 4) were firing from other pistol.
C7FA7U	Two of the bullets (Items 01-02 and 01-03) were fired by a single firearm; the firearm was not eliminated as being the "SCCY CPX-2 9mm handgun" due to the agreement of all discernible class characteristics and disagreement of individual details, but insufficient for an elimination.

TABLE 3

WebCode	Additional Comments
	The result is inconclusive. Firearms with similar general rifling characteristics (GRC) as the bullet (Item 01-04) include but are not limited to 9mm Luger firearms manufactured by Smith & Wesson.
CXZ8MU	Report written from the standpoint of receiving the test fires from the firearm not test firing the firearm as an examiner within a forensic laboratory. Based on what was received and examined. Did not receive the questioned firearm to test fire, only received the test fired ammunition. Thank you
CYHL93	The projectiles in Items 2 and 3 were fired in the same gun based on agreement observed in individual characteristics. However, due to insufficient reproducible individual characteristics the projectiles in Items 2 and 3 could not be positively included or excluded as having been fired in the gun that fired the projectiles in Item 1 to the exclusion of all other firearms bearing the same class characteristics.
DUHW62	Due to insufficient reproducible individual characteristics, the projectiles in Items 2 and 3 could not be positively included or excluded as having been fired in the same gun that fired the projectiles in Item 1 to the exclusion of all other firearms bearing the same class characteristics.
EKC86B	Reason for inconclusive result: Items 2 and 3 exhibit agreement of all discernible class characteristics as those exhibited by Item 1 sample bullets, but cannot be identified or eliminated as having been fired from the same firearm that fired Item 1 sample bullets, due to a lack of sufficient agreement of individual characteristics.
EZFFQB	The bullets (items 2, 3) were fired by a firearm different from that which fired the bullet 4.
F6BXXG	The land and groove measurements on item 2 and item 3 are close to item 1 and item 5 so I cannot eliminate except for a difference in class. The individual characteristics reproduced poorly amongst all of the items. The only proper conclusion left is inconclusive.
FPZAPL	The bullets in Item 2 and Item 3 ID'd to each other. The marks used for ID were primarily located along the edges of multiple land impressions. The land impressions on Item 2 and Item 3 also appeared to be a little more shallow than the land impressions in Item 1 or Item 5. The marks used to ID Item 5 with Item 1 were more centered on the land impressions and were quite prevalent towards the base. Based on my examinations of Item 2 and Item 3, the marks in these central areas were washed out, thus I did not note any agreement or disagreement of individual characteristics when compared with Item 1 or Item 5.
FXYHMZ	Summary of Findings: Three different firearms were used to discharge the exhibit fired bullets (2 -5) at the crime scene. Bullet marked 5 was discharged from the recovered SCCY CPX-2 9mm handgun. Bullets marked 2 and 3 were discharged from the same firearm but NOT the recovered firearm. And bullet marked 4 was discharged from a third firearm and NOT the recovered firearm.
G9V3BK	The bullets in Item 1 and Item 5 have the same class and individual characteristics sufficient for identification to one another. The bullets in Items 2 and 3 have the same class and individual characteristics sufficient for identification to one another. There are insufficient individual characteristics between Items 1 and 5 with Items 2 and 3 although they have the same class.
GJNQYR	Item 2 and Item 3 had some family characteristics that were similar with Item 1 but both lack

TABLE 3

WebCode	Additional Comments
GU763U	of individual characteristics with Item 1. Hence, both Item 1 and Item 2 could not be eliminated nor identified.
GU763U	Items 2,3 and 4 are eliminated as being fired from item 1 based on differences in markings and/or rifling characteristics.
HGHYFD	<p>Methods: Bullet Examination: Two bullets, either two evidence items or one evidence item and one bullet test fired in the Laboratory, undergo two stages of comparison. First, the bullets are examined to determine and compare their class characteristics. The class characteristics of fired bullets include diameter, number of land and groove impressions, direction of twist, and the widths of the land and groove impressions. If the class characteristics of the two bullets are not clearly different, the examination moves to a second stage using comparative microscopy. A microscopic comparison examination consists of a search of the striated marks present on two bullets 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 bullets did not originate from the same source. The basis for a source exclusion conclusion is an Examiner's decision that two bullets can be differentiated by their class characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two bullets originated from the same source. Conditions for a source identification include the degree of similarity being greater than the Examiner has ever observed in previous evaluations of bullets known to have been fired from different barrels; and the degree of similarity is equivalent to that normally observed in bullets known to have been fired from the same barrel. The basis for a source identification conclusion is an Examiner's decision that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): If the conditions required for an Exclusion or Identification are not observed, an opinion of Inconclusive is rendered. A failure to meet the conditions for an Exclusion or Identification could be the result of limited microscopic marks of value, a lack of any observed microscopic similarity, or microscopic similarity that is present but too limited to meet the criteria for Identification. GRC: The appropriate GRC measurements are entered in the database, which then returns a list of all firearms in the database with compatible GRCs. Limitations: Bullet Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to random changes in barrels such as wear, corrosion and lead and jacket material accumulation, bullets fired from the same barrel are sometimes not identifiable as such. Additionally, some barrel manufacturing methods routinely produce barrels that leave limited microscopic marks of value on fired bullets. Additionally, damaged, corroded or fragmented bullets may be of little or no value for comparison purposes. GRC: The GRC database contains information obtained from firearms at the [Laboratory] and from voluntary submissions of test-fired specimens from law enforcement agencies around the world. 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 authoring the report.</p>
J3FBTH	Item 4 is inconclusive because it has 5 LEAs the others have 7.

TABLE 3

WebCode	Additional Comments
JGQ2NB	The items labeled Item2 and Item3 were fired by the same firearm.
K9VHL8	*Our approach in casework is to provide a level of support based on two competing propositions, rather than being restricted to 'conclusive' or 'inconclusive'. This avoids problems regarding 'uniqueness' and allows useful non-conclusive findings to be evaluated rather than ignored. However, this approach works in the context of casework situations. It is less suitable for a proficiency test which (understandably) includes questioned items fired from another pistol that produces very similar firing marks to those of the recovered firearm. Some extraneous scratch marks were found across the firing marks on the bullets in item 1, possibly caused during preparation of the trial, although these did not appear to compromise our examination.
KNR8TK	<p>Methods: Bullet Examination: Two bullets, either two evidence items or one evidence item and one bullet test fired in the Laboratory, undergo two stages of comparison. First, the bullets are examined to determine and compare their class characteristics. The class characteristics of fired bullets include diameter, number of land and groove impressions, direction of twist, and the widths of the land and groove impressions. If the class characteristics of the two bullets are not clearly different, the examination moves to a second stage using comparative microscopy. A microscopic comparison examination consists of a search of the striated marks present on two bullets 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 bullets did not originate from the same source. The basis for a source exclusion conclusion is an Examiner's decision that two bullets can be differentiated by their class characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two bullets originated from the same source. Conditions for a source identification include the degree of similarity being greater than the Examiner has ever observed in previous evaluations of bullets known to have been fired from different barrels; and the degree of similarity is equivalent to that normally observed in bullets known to have been fired from the same barrel. The basis for a source identification conclusion is an Examiner's decision that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two bullets as having originated from the same source. The basis for an inconclusive conclusion is an Examiner's decision 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; a lack of any observed microscopic similarity; or microscopic dissimilarity that is insufficient to form the conclusion of source exclusion. GRC: The appropriate GRC measurements are entered in the database, which then returns a list of all firearms in the database with compatible GRCs. Limitations: Bullet Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to random changes in barrels such as wear, corrosion and lead and jacket material accumulation, bullets fired from the same barrel are sometimes not identifiable as such. Additionally, some barrel</p>

TABLE 3

WebCode	Additional Comments
	manufacturing methods routinely produce barrels that leave limited microscopic marks of value on fired bullets. Additionally, damaged, corroded or fragmented bullets may be of little or no value for comparison purposes. GRC: The GRC database contains information obtained from firearms at the [Laboratory] and from voluntary submissions of test-fired specimens from law enforcement agencies around the world. 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 authoring the report.
LAL4T3	A. The Bullet described in Item 4 is eliminated by class characteristic in its groove (R-5).
LPLWN7	Unknowns compared prior to comparison with knowns. Knowns were then also inner compared for the best for comparison with unknowns. Items 2 and 3 were identified as having been fired from the same firearm, but not from the Sccy Pistol. Item 4 was eliminated based on different class characteristics. Test fired bullet used to ultimately make identification & eliminations labeled as Item 1a
LTEXNY	See Attached Report. [Attachment not provided by participant]
LV7W4H	Lab policy does not allow for eliminations to be based on individual characteristics alone.
MPB7V8	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 2 and ITEM 3 were fired in the same firearm (GUN 2). In my opinion, a microscopical comparison of firing marks has shown there is significant disagreement of class characteristic markings and individual characteristic markings, therefore the bullet ITEM 4 was not fired from either GUN 1 (ITEM 1) or GUN 2 (ITEMS 2 & 3).
NVHGVJ	A second pistol with the same class as the exhibit pistol Item 1 remains outstanding. A third pistol with different class characteristics also remains outstanding. Better kick the doors in on the suspects friends.
NYK79Z	Item #2 and Item #3 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items #2 and #3 are identified as having been fired from the same unknown firearm. Item #2 and Item #4 were microscopically examined and compared. Based on the observed disagreement of class characteristics, Items #2 and #4 are eliminated as having been fired from the same firearm.
PEE4ZM	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 2 and 3 exhibit characteristics found in (but not limited to) the following firearms: SCCY 9mm Luger caliber firearms. Item 4 exhibits characteristics found in (but not limited to) the following firearms: Ruger and Smith & Wesson 9mm Luger caliber firearms.
PHRXN8	Items 2 and 3 were inconclusive to the Item 1 test fires due to agreement of class, but insufficient agreement for an ID, and insufficient disagreement for an elimination.
QGENBZ	It was noted that Items 2 and 3 exhibited class and individual characteristic correspondence to one another. No formal conclusions were reached regarding these two items.
QXYV9D	Methods: Bullet Examination: Two bullets, either two evidence items or one evidence item and one bullet test fired in the Laboratory, undergo two stages of comparison. First, the bullets are

TABLE 3

WebCode	Additional Comments
	<p>examined to determine and compare their class characteristics. The class characteristics of fired bullets include diameter, number of land and groove impressions, direction of twist, and the widths of the land and groove impressions. If the class characteristics of the two bullets are not clearly different, the examination moves to a second stage using comparative microscopy. A microscopic comparison examination consists of a search of the striated marks present on two bullets 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 bullets did not originate from the same source. The basis for a source exclusion conclusion is an Examiner's decision that two bullets can be differentiated by their class characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two bullets originated from the same source. Conditions for a source identification include the degree of similarity being greater than the Examiner has ever observed in previous evaluations of bullets known to have been fired from different barrels; and the degree of similarity is equivalent to that normally observed in bullets known to have been fired from the same barrel. The basis for a source identification conclusion is an Examiner's decision that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two bullets as having originated from the same source. The basis for an inconclusive conclusion is an Examiner's decision 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; a lack of any observed microscopic similarity; or microscopic dissimilarity that is insufficient to form the conclusion of source exclusion. GRC: The appropriate GRC measurements are entered in the database, which then returns a list of all firearms in the database with compatible GRCs. Limitations: Bullet Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to random changes in barrels such as wear, corrosion and lead and jacket material accumulation, bullets fired from the same barrel are sometimes not identifiable as such. Additionally, some barrel manufacturing methods routinely produce barrels that leave limited microscopic marks of value on fired bullets. Additionally, damaged, corroded or fragmented bullets may be of little or no value for comparison purposes. GRC: The GRC database contains information obtained from firearms at the [Laboratory] and from voluntary submissions of test-fired specimens from law enforcement agencies around the world. 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 authoring the report.</p>
QZLXBX	<p>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</p>

TABLE 3

WebCode	Additional Comments
	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.
R2Q8CT	PISTOL "A": (ITEM#1 AND ITEM#5)SCCY CPX-2. PISTOL "B": (ITEM#2 AND ITEM#3) SAME FAMILY CHARACTERISTICS AS PISTOL "A". PISTOL "C": (ITEM#4)DIFFERENT FAMILY CHARACTERISTICS FROM PISTOLS "A" AND "B".
REF2TU	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.
T7YXBT	The quality of the samples was good. The difficulty of the test was appropriate.
VB8TC9	The Items 2 and 3 bullets were determined to be of 9mm caliber, displaying rifling characteristics of 7 lands and grooves, right-hand twist. Manufacturers of firearms with similar rifling characteristics include, but not limited to, those produced by SKYY/SCCY Industries. The Item 4 bullet was determined to be of 9mm caliber, displaying rifling characteristics of 5 lands and grooves, right-hand twist. Manufacturers of firearms with similar rifling characteristics include, but not limited to, those produced by Fabrique Nationale, Ruger, and Smith and Wesson. The Item 5 bullet was determined to be of 9mm caliber, displaying rifling characteristics of 7 lands and grooves, right-hand twist
VZL4KA	Methods: Bullet Examination: Two bullets, either two evidence items or one evidence item and one bullet test fired in the Laboratory, undergo two stages of comparison. First, the bullets are examined to determine and compare their class characteristics. The class characteristics of fired bullets include diameter, number of land and groove impressions, direction of twist, and the widths of the land and groove impressions. If the class characteristics of the two bullets are not clearly different, the examination moves to a second stage using comparative microscopy. A microscopic comparison examination consists of a search of the striated marks present on two bullets 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 bullets did not originate from the same source. The basis for a source exclusion conclusion is an Examiner's decision that two bullets can be differentiated by their class characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two bullets originated from the same source. Conditions for a source identification include the degree of similarity being greater than the Examiner has ever observed in previous evaluations of bullets known to have been fired from different barrels; and the degree of similarity is equivalent to that normally observed in bullets known to have been fired from the same barrel. The basis for a source identification conclusion is an Examiner's decision that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks

TABLE 3

WebCode	Additional Comments
	<p>came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two bullets as having originated from the same source. The basis for an inconclusive conclusion is an Examiner's decision 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; a lack of any observed microscopic similarity; or microscopic dissimilarity that is insufficient to form the conclusion of source exclusion. GRC: The appropriate GRC measurements are entered in the database, which then returns a list of all firearms in the database with compatible GRCs. Limitations: Bullet Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to random changes in barrels such as wear, corrosion and lead and jacket material accumulation, bullets fired from the same barrel are sometimes not identifiable as such. Additionally, some barrel manufacturing methods routinely produce barrels that leave limited microscopic marks of value on fired bullets. Additionally, damaged, corroded or fragmented bullets may be of little or no value for comparison purposes. GRC: The GRC database contains information obtained from firearms at the [Laboratory] and from voluntary submissions of test-fired specimens from law enforcement agencies around the world. 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 authoring the report.</p>
VZMLDJ	<p>The class characteristics between Items 2, 3 and Item 1 were consistent. Due to insufficient reproducible individual characteristics, Items 2 and 3 could not be positively included or excluded as being fired in the same gun as the projectiles in Item 1. The projectiles in Items 2 and 3 were fired in the same gun, based on agreement observed in individual characteristics.</p>
WB4NEB	<p>Differences in individual characteristics were noted between the Items 01-02 and 01-03 bullets (agency Items 2 and 3) and the Items 01-01 and 01-05 bullets (agency Items 1 and 5), but were ultimately insufficient for elimination. Due to the agreement of all discernible class characteristics for these items, and insufficient disagreement of individual characteristics, the conclusion of inconclusive was appropriate.</p>
WE4Y9P	<p>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 firearms/tools. However, observing this amount of agreement from a different source is considered extremely remote.</p>
WQJRTJ	<p>LIMITATIONS: *Practical Certainty: Since it is not possible to collect and examine samples of all firearms, it is not possible to make an identification with absolute certainty. However all scientific research and testing to date and the continuous inability to disprove the principles of toolmark analysis have demonstrated that firearms produce unique, identifiable characteristics</p>

TABLE 3

WebCode	Additional Comments
	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.
XNY2TR	The identification of the correspondence on the ballistic fingerprint between items 1 and 5 is based upon the class characteristics and the correspondence on individual characteristics that proves that it was produced by the mechanisms of a same firearm. The same case applies on items 2 and 3.
XWZQJP	These conclusions are based in the bullet examination, microscopic examination and microscopic comparison examination. Identification: Based on the agreement of the individual characteristics observed through the microscopic comparison examination.
XXXRV9	Two bullets (Items 2 and 3) were not identified or eliminated as being fired by the same firearm as the test fires reportedly fired by the SCCY pistol (Item 1) because there is an agreement of discernable class characteristics and a lack of agreement or disagreement in the individual characteristics and pattern areas.
YR3NXM	Similarities have been observed between the marks in the bullets Items 2 and 3. This observation lead to an additional examination between the marks in Item 2 and 3. The findings of this examination were viewed under the following two hypotheses: H3: The questioned 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 at least very much more probable when H3 is true than when H4 is true.
YV4KQ3	Items 2 and 3 are consistent in all class characteristics as Items 1 and 5. Most of the gross markings used for indexing did not agree when comparing the two groups to each other. There are differences in individual characteristics; however, eliminating based on individual characteristics on bullet items is the hardest conclusion to make. There was one land impression on Item 2 that had some agreement with one of the fired bullets from Item 1. This agreement caused hesitation in eliminating Items 2 and 3 from the same firearm as Items 1 and 5. This led to the inconclusive conclusions between the two groups. As an additional comment, I was a second analyst (verifying analyst) and reviewer of work done in the previous CTS external proficiency test that involved fired casings said to be from a 9mm Luger SCCY Model CPX-2 semiautomatic pistol with an unknown serial number. I remembered that the conclusions reached during that examination was one of the cartridge cases was identified back to the firearm, one cartridge case was eliminated based on class based on the outline of the firing pin impression which was consistent with being fired from a Smith and Wesson M&P semiautomatic pistol, and two fired casings that were identified to each other but were either eliminated based on individual characteristics to the firearm or were determined to be inconclusive to the firearm. Once I recorded the class characteristics of the items for this proficiency test and noticed three bullets were consistent in class with the test fires and one was consistent in class with Smith and Wesson firearms, I immediately recalled the previous test's results. There may have been confirmation bias that came into account as I went into this test thinking that there would be one identification back to the firearm, one elimination based on class, and two that would be identified to each other but either eliminated or found to be inconclusive to the firearm.
Z3F786	No indication that Items 1 and 5 were fired in the same firearm that Items 2 and 3 were fired from. However, significant disagreement not observed and it is the policy of this laboratory to

TABLE 3

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	<p>not routinely eliminate solely on individual characteristics. Items 1 (A through C) and 5 have a gross reproducing feature in 1 LIMP (blue index) that is not present in any LIMPs on Items 2 or 3. If firearm was available to laboratory a cast of the barrel could be taken to determine if this gross feature was due to debris in barrel, a defect in the barrel, or a manufacturing-related mark.</p>
ZEMNNU	<p>Methods: Bullet Examination: Two bullets, either two evidence items or one evidence item and one bullet test fired in the Laboratory, undergo two stages of comparison. First, the bullets are examined to determine and compare their class characteristics. The class characteristics of fired bullets include diameter, number of land and groove impressions, direction of twist, and the widths of the land and groove impressions. If the class characteristics of the two bullets are not clearly different, the examination moves to a second stage using comparative microscopy. A microscopic comparison examination consists of a search of the striated marks present on two bullets 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 bullets did not originate from the same source. The basis for a source exclusion conclusion is an Examiner's decision that two bullets can be differentiated by their class characteristics. A source exclusion based on general differences does not require a verification. However, a source exclusion based on a minor difference in a measured class characteristic requires a verification. 2) Source Identification: Source identification is an Examiner's conclusion that two bullets originated from the same source. Conditions for a source identification include the degree of similarity being greater than the Examiner has ever observed in previous evaluations of bullets known to have been fired from different barrels; and the degree of similarity is equivalent to that normally observed in bullets known to have been fired from the same barrel. The basis for a source identification conclusion is an Examiner's decision that the observed class characteristics and corresponding individual characteristics provide extremely strong support for the proposition that the two toolmarks came from the same source and extremely weak support for the proposition that the two toolmarks came from different sources. Before being reported, a source identification requires a verification to be completed. 3) Inconclusive (No Conclusion): Inconclusive is an Examiner's conclusion that all observed class characteristics are in agreement but there is insufficient quality and quantity of corresponding individual characteristics such that the Examiner is unable to identify or exclude the two bullets as having originated from the same source. The basis for an inconclusive conclusion is an Examiner's decision 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; a lack of any observed microscopic similarity; or microscopic dissimilarity that is insufficient to form the conclusion of source exclusion. GRC: The appropriate GRC measurements are entered in the database, which then returns a list of all firearms in the database with compatible GRCs. Limitations: Bullet Examination: Firearms/Toolmark Identification is an empirical science that relies on objective measurements and a subjective comparison of microscopic marks of value. Due to random changes in barrels such as wear, corrosion and lead and jacket material accumulation, bullets fired from the same barrel are sometimes not identifiable as such. Additionally, some barrel manufacturing methods routinely produce barrels that leave limited microscopic marks of value on fired bullets. Additionally, damaged, corroded or fragmented bullets may be of little or no value for comparison purposes. GRC: The GRC database contains information obtained from firearms at the [Laboratory] and from voluntary submissions of test-fired specimens from law enforcement agencies around the world. It is not a comprehensive list of all firearms, and contains no information about the numbers of each type of firearm present in</p>

TABLE 3

WebCode	Additional Comments
ZGWYXW	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 authoring the report.
ZHQP3Q	Sufficient agreement is related to the significant duplication of random toolmarks as evidence by a pattern or combination of patterns of surface contours. "Sufficient agreement" exists between two toolmarks means that the agreement is of a quantity and quality that the likelihood another tool could have made the mark is so remote as to be considered a practical impossibility.
ZVHD9B	Based upon the observed similarities of individual characteristics (striated Marks), the bullets marked T1 – T2 were positively identified as being matched to each other. They were both fired from a second (unknown) firearm.
ZVHD9B	The markings on item 3 were significantly better than those on item 2.

-End of Report-
(Appendix may follow)

Test No. 19-527: Firearms Examination

DATA MUST BE SUBMITTED BY **Dec. 16, 2019, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A

WebCode: J7Z7NN

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 are investigating a homicide that occurred in a parking lot. The victim was shot once and the bullet was recovered by the medical examiner. Investigators also recovered three bullets from the scene, two from the road and one from the sidewalk. A suspect was apprehended later that day and a SCCY CPX-2 9mm handgun was seized from his vehicle. Three rounds of Remington® 9mm Luger 115 grain FMJ ammunition (consistent with the bullets found at the scene) were test fired from the recovered firearm and the bullets collected. Investigators are asking you to compare the recovered bullets from the victim and scene with those test fired in the recovered 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.

-The bullet stated to have been recovered from the victim was never exposed to biological material.

Items Submitted (Sample Pack F2):

Item 1: Three bullets fired using the recovered firearm (known).

Item 2: First bullet recovered from the road at the scene (questioned).

Item 3: Second bullet recovered from the road at the scene (questioned).

Item 4: Bullet recovered from the sidewalk (questioned).

Item 5: Bullet recovered from the victim (questioned).

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

<i>Item 2</i>	Yes <input type="radio"/>	No <input type="radio"/>	Inconclusive* <input type="radio"/>
<i>Item 3</i>	Yes <input type="radio"/>	No <input type="radio"/>	Inconclusive* <input type="radio"/>
<i>Item 4</i>	Yes <input type="radio"/>	No <input type="radio"/>	Inconclusive* <input type="radio"/>
<i>Item 5</i>	Yes <input type="radio"/>	No <input type="radio"/>	Inconclusive* <input type="radio"/>

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

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety.

Authorized Contact Person and Title

Laboratory Name

Location (City/State)