



Firearms Examination Test No. 15-527 Summary Report

This test was sent to 336 participants. 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 278 participants (83% response rate) and are compiled into the following tables:

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

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

Manufacturer's Information

Each sample set contained five items: Item 1 consisted of three bullets fired in the suspect's firearm. Item 2 (recovered from the victim) and Items 3, 4 and 5 (recovered from the scene) each consisted of one bullet recovered from the scene. Federal® American Eagle® 40 S&W 180 grain full metal jacket (FMJ) Centerfire ammunition was used for all five items. 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.

The bullets in Items 1, 3 and 5 were fired in a Ruger P94DC Auto handgun (Serial number 341-04450). Items 2 and 4 were fired in a Ruger P91DC Auto handgun (Serial number 340-01813).

ITEMS 1, 3 and 5 (IDENTIFICATION): Multiple magazines were loaded with ammunition totaling 120 rounds in preparation for firing into a water recovery tank with the Ruger P94DC handgun. After the ammunition was expended, the bullets were collected and packaged together as a batch in zip top bags. 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), "3" (one bullet) and a "5" (one bullet), then sealed into their respective jewel boxes and kept together as an association batch.

ITEMS 2 and 4 (ELIMINATION): Multiple magazines were loaded with ammunition totaling 120 rounds in preparation for firing into a water recovery tank with the Ruger P91DC handgun. After the ammunition was expended, the bullets were collected and packaged together as a batch in zip top bags. 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" or "4" (one bullet each), then sealed into their respective jewel boxes and kept together as an elimination batch.

SAMPLE SET ASSEMBLY: For each sample set, Items 2 and 4 of the same elimination batch, along with Items 1, 3 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 within each batch. Laboratories that conducted the predistribution examination of the completed sample sets reported the expected identifications and eliminations.

Summary Comments

This test was designed to allow participants to assess their proficiency in a comparison of expended bullets. Participants were provided with four questioned expended Federal® American Eagle® 40 S&W 180 grain full metal jacket (FMJ) Centerfire ammunition bullets (Items 2-5) which they were requested to compare with three known expended bullets (Item 1) of the same manufacturer fired in the suspect's weapon, a Ruger P94DC Auto handgun (serial number 341-04450). For each sample set, the Item 3 and Item 5 bullets were fired in the same firearm as the Item 1 known bullets. The Item 2 and Item 4 bullets were fired in a different firearm from that which discharged the known expended bullets (Item 1). (Refer to Manufacturer's Information for preparation details.)

In Table 1 Response Summary, 275 of 278 (99%) responding participants identified Items 3 and 5 and either eliminated or reported "Inconclusive" for Items 2 and 4 as having been fired from the same firearm as the Item 1 test-fired bullets. [Many labs will not, as a matter of policy, eliminate without access to the firearm or when class characteristics match.] Two participants identified Items 2, 3, 4 and 5 as having been fired from the same firearm as the Item 1 test-fired bullets and one participant eliminated Item 5.

The majority of participants reported that Items 2 and 4 had been fired in a second, unknown firearm.

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
23BTBR	Inc	Yes	Inc	Yes	69HX6L	No	Yes	No	Yes
2B7WFN	No	Yes	No	Yes	6EPHDD	No	Yes	No	Yes
2FG932	No	Yes	No	Yes	6FMNPQ	Inc	Yes	Inc	Yes
2JXGDA	No	Yes	No	Yes	6KHLCV	Inc	Yes	Inc	Yes
2KUWP7	Inc	Yes	Inc	Yes	6PTEFV	No	Yes	No	Yes
2LNMVL	No	Yes	No	Yes	6RJJ93	No	Yes	No	Yes
2N4CUN	Inc	Yes	Inc	Yes	6TTQCU	No	Yes	No	Yes
39W9D4	Inc	Yes	Inc	Yes	76Y2GW	No	Yes	No	Yes
3DTWWW	No	Yes	No	Yes	796GWE	No	Yes	No	Yes
3GKDTH	No	Yes	No	Yes	7B3AJH	Inc	Yes	Inc	Yes
3H38VQ	No	Yes	No	Yes	7E8XY8	Inc	Yes	Inc	Yes
3HXUAF	No	Yes	No	Yes	7EKE8F	No	Yes	No	Yes
3KKCGU	No	Yes	No	Yes	7KA4PG	No	Yes	No	Yes
3N3QVZ	No	Yes	No	Yes	7L94Q3	No	Yes	No	Yes
3QTXEC	No	Yes	No	Yes	7P7MTZ	No	Yes	No	Yes
3YQNRM	No	Yes	No	Yes	7UGLB9	Inc	Yes	Inc	Yes
47YLVW	No	Yes	No	Yes	836YND	No	Yes	No	Yes
4AYVY8	No	Yes	No	Yes	8BHNN7	No	Yes	No	Yes
4EVCHT	No	Yes	No	Yes	8CD8TT	No	Yes	No	Yes
4J6DW6	No	Yes	No	Yes	8CDC6G	No	Yes	No	Yes
4M93FQ	No	Yes	No	Yes	8JWQM7	No	Yes	No	Yes
4MQETP	No	Yes	No	Yes	8KCRYV	No	Yes	No	Yes
4TDAEG	No	Yes	No	Yes	8KPKBP	No	Yes	No	Yes
63J88Q	No	Yes	No	Yes	8NTGXX	Inc	Yes	Inc	Yes
68P8Y8	No	Yes	No	Yes	8WH24W	No	Yes	No	Yes
694LGP	No	Yes	No	Yes					

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
96UKWU	No	Yes	No	Yes	C3A2E7	No	Yes	No	Yes
98Z3YW	Inc	Yes	Inc	Yes	C3AUBF	No	Yes	No	Yes
99RXT6	No	Yes	No	Yes	C6DPUH	No	Yes	No	Yes
9EZAWK	No	Yes	No	Yes	C9FQUF	No	Yes	No	Yes
9HZGDB	No	Yes	No	Yes	CAB9WG	No	Yes	No	Yes
9LHTZK	Inc	Yes	Inc	Yes	CABZDW	No	Yes	No	Yes
9P2N3C	No	Yes	No	Yes	CAWQ7H	No	Yes	No	Yes
AC9K34	No	Yes	No	Yes	CDTDR4	No	Yes	No	Yes
AHEGL4	No	Yes	No	Yes	CDV23H	No	Yes	No	Yes
ALDW4E	No	Yes	No	Yes	CENU7L	No	Yes	No	Yes
ALEF9G	Inc	Yes	Inc	Yes	CH73GU	No	Yes	No	Yes
APBZAF	No	Yes	No	Yes	CJYTM9	No	Yes	No	Yes
AQ6Y3X	No	Yes	No	Yes	CQ6HB9	No	Yes	No	Yes
AR3DHQ	Inc	Yes	Inc	Yes	CVBDRM	Inc	Yes	Inc	Yes
AX79AD	No	Yes	No	Yes	CZ747X	No	Yes	No	Yes
AYKNPZ	No	Yes	No	Yes	D2GACM	No	Yes	No	Yes
B8ANVN	No	Yes	No	Yes	DBKGT8	No	Yes	No	Yes
B8XVAA	No	Yes	No	Yes	DJGDLP	Inc	Yes	Inc	Yes
BDG6DC	No	Yes	No	Yes	DJYB3H	No	Yes	No	Yes
BDHXBK	No	Yes	No	Yes	DMHAFD	Inc	Yes	Inc	Yes
BGWX46	No	Yes	No	Yes	DMU4XY	No	Yes	No	Yes
BPCAPJ	No	Yes	No	Yes	DMXPRT	Inc	Yes	Inc	Yes
BRDKD7	No	Yes	No	Yes	DVUHWR	No	Yes	No	Yes
BRXADQ	No	Yes	No	Yes	DYRZ48	No	Yes	No	Yes
BUAP8R	No	Yes	No	Yes	DZLLVC	No	Yes	No	Yes
BYT82G	No	Yes	No	Yes	E2V3JA	No	Yes	No	Yes
BYXH4E	No	Yes	No	Yes	E6CF84	No	Yes	No	Yes
BZBAWV	No	Yes	No	Yes	E83LQF	No	Yes	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
E8TYWE	No	Yes	No	Yes	J9ZKWP	No	Yes	No	Yes
ELYUEG	No	Yes	No	Yes	JEFFD7	No	Yes	No	Yes
EMAP6F	No	Yes	No	Yes	JGBRJ8	Inc	Yes	Inc	Yes
FEFR3D	No	Yes	No	Yes	JJUV94	No	Yes	No	Yes
FFTLPD	No	Yes	No	Yes	JMEXYA	Inc	Yes	Inc	Yes
FJ9WVG	No	Yes	No	Yes	JNDWHH	No	Yes	No	Yes
FNK2CW	No	Yes	No	Yes	JNTDDB	No	Yes	No	Yes
FQB8U8	No	Yes	No	Yes	JP9HAN	No	Yes	No	Yes
FYZY49	No	Yes	No	Yes	K2AFN9	Inc	Yes	Inc	Yes
G4RKMT	No	Yes	No	Yes	K38Y7E	No	Yes	No	Yes
G94BY3	No	Yes	No	Yes	K6RPLC	No	Yes	No	Yes
GJM2EC	No	Yes	No	Yes	KBFE2F	No	Yes	No	Yes
GR2R7K	Inc	Yes	Inc	Yes	KRLQJ8	No	Yes	Inc	Yes
GTVAA8	Inc	Yes	Inc	Yes	KU9HHG	No	Yes	No	Yes
GWTW2A	No	Yes	No	Yes	KYZPY6	No	Yes	No	No
H2GWMT	No	Yes	No	Yes	L9M2W3	No	Yes	No	Yes
H2LGBW	No	Yes	No	Yes	L9RHU2	Inc	Yes	Inc	Yes
H677YF	No	Yes	No	Yes	LA4WRV	No	Yes	No	Yes
HGAJU9	No	Yes	No	Yes	LEF3Z3	No	Yes	No	Yes
HGU8K4	No	Yes	No	Yes	LEW2BE	No	Yes	No	Yes
HLP6QL	No	Yes	No	Yes	LNZDGU	No	Yes	No	Yes
HTQF47	No	Yes	No	Yes	LTV6PQ	No	Yes	No	Yes
HVLLH	Inc	Yes	Inc	Yes	LU7TCY	No	Yes	No	Yes
HZAFL4	No	Yes	No	Yes	LWBFQN	No	Yes	No	Yes
J3CYRN	No	Yes	No	Yes	M4BKUR	No	Yes	No	Yes
J7BDCT	No	Yes	No	Yes	MGH29A	No	Yes	No	Yes
J83BUM	Inc	Yes	Inc	Yes	MM2PDP	Inc	Yes	Inc	Yes
J8NTVM	No	Yes	No	Yes	MYENFY	No	Yes	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
MZUXKT	No	Yes	No	Yes	QHYQTA	No	Yes	No	Yes
N2KDCG	No	Yes	No	Yes	QLFY4H	No	Yes	No	Yes
N3GUND	No	Yes	No	Yes	QMAPAW	No	Yes	No	Yes
N3GWDH	No	Yes	No	Yes	QPMCUW	No	Yes	No	Yes
N8MP8D	No	Yes	No	Yes	QR94WL	No	Yes	No	Yes
N9FFDR	Inc	Yes	Inc	Yes	QV7JAF	Yes	Yes	Yes	Yes
NABYFT	No	Yes	No	Yes	QVQFGA	No	Yes	No	Yes
NC2FET	No	Yes	No	Yes	QYM2DR	No	Yes	No	Yes
NHZYK6	No	Yes	No	Yes	R6R33E	No	Yes	No	Yes
NKBRP6	No	Yes	No	Yes	R7H9KQ	No	Yes	No	Yes
NM6A2R	No	Yes	No	Yes	R7LT9U	No	Yes	No	Yes
NRY6VZ	No	Yes	No	Yes	R9PJQF	No	Yes	No	Yes
NZ74AF	No	Yes	No	Yes	REFWK4	No	Yes	No	Yes
P2VYZ9	No	Yes	No	Yes	RLTWNT	No	Yes	No	Yes
P3UZ7Z	No	Yes	No	Yes	RM92L6	Inc	Yes	Inc	Yes
P79FU7	No	Yes	No	Yes	T2L2H9	No	Yes	No	Yes
P9VDWF	No	Yes	No	Yes	T3FRNM	No	Yes	No	Yes
PCCLAA	No	Yes	No	Yes	T3WZNN	No	Yes	No	Yes
PDQ3F9	No	Yes	No	Yes	T4RJRB	Inc	Yes	Inc	Yes
PE2TRK	No	Yes	No	Yes	TBTVM8	No	Yes	No	Yes
PH4Q3D	No	Yes	No	Yes	TF4U4U	No	Yes	No	Yes
PKTZCE	No	Yes	No	Yes	TF6M22	No	Yes	No	Yes
Q6UDJR	No	Yes	No	Yes	THBADK	Inc	Yes	Inc	Yes
Q768E6	No	Yes	No	Yes	TLC6C2	Inc	Yes	Inc	Yes
Q7KQX4	No	Yes	No	Yes	TM7VFU	No	Yes	No	Yes
Q7N2Z2	Inc	Yes	Inc	Yes	TYH2N3	No	Yes	No	Yes
QBXAB6	No	Yes	No	Yes	TZPL6B	No	Yes	No	Yes
QFRDXG	No	Yes	No	Yes	U63L7A	No	Yes	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
U96KG2	No	Yes	No	Yes	X693ZX	No	Yes	No	Yes
ULQWZB	No	Yes	No	Yes	X98J7R	No	Yes	No	Yes
UQFGRK	No	Yes	No	Yes	X9CYEL	Inc	Yes	Inc	Yes
UVC9YW	Inc	Yes	Inc	Yes	XGF6ZM	No	Yes	No	Yes
UYTKK6	Inc	Yes	Inc	Yes	XHAV4G	No	Yes	No	Yes
V2DU8C	Inc	Yes	Inc	Yes	XJBV8Z	No	Yes	No	Yes
V2XFXG	No	Yes	No	Yes	XM6XX9	Yes	Yes	Yes	Yes
V3TY24	No	Yes	No	Yes	XMR4H9	No	Yes	No	Yes
V3UXZH	No	Yes	No	Yes	XNLUMM	No	Yes	No	Yes
V4NLGR	No	Yes	No	Yes	XTWZ8Z	No	Yes	No	Yes
VBN27Z	No	Yes	No	Yes	XYLK7A	No	Yes	No	Yes
VDRWMH	No	Yes	No	Yes	Y26VJJ	No	Yes	No	Yes
VFG6WJ	Inc	Yes	Inc	Yes	Y327RE	No	Yes	No	Yes
VMGG78	No	Yes	No	Yes	Y8AXLY	No	Yes	No	Yes
VNQLHB	No	Yes	No	Yes	YAZV9H	No	Yes	No	Yes
VPL6JC	No	Yes	No	Yes	YETY84	Inc	Yes	Inc	Yes
VUE7MC	No	Yes	No	Yes	YHR7LY	No	Yes	No	Yes
VXG8N9	No	Yes	No	Yes	YQKHNU	No	Yes	No	Yes
W2BADG	No	Yes	No	Yes	YTTW3Z	No	Yes	No	Yes
W4JHM2	No	Yes	No	Yes	YW42EM	No	Yes	No	Yes
W8KKJ3	No	Yes	No	Yes	ZBNLW9	No	Yes	No	Yes
W8Y9J9	No	Yes	No	Yes	ZFV8KT	Inc	Yes	Inc	Yes
WHFX4M	No	Yes	No	Yes	ZH8XX4	No	Yes	No	Yes
WLFA28	No	Yes	No	Yes	ZM696A	Inc	Yes	Inc	Yes
WMXTD7	No	Yes	No	Yes	ZPQDFR	No	Yes	No	Yes
WRMF2K	No	Yes	No	Yes	ZQZ29R	No	Yes	No	Yes
WTFL4W	Inc	Yes	Inc	Yes	ZRCUUT	No	Yes	No	Yes
WVRZ4C	No	Yes	No	Yes	ZVEZ9C	No	Yes	No	Yes

TABLE 1

WebCode	Item 2	Item 3	Item 4	Item 5	WebCode	Item 2	Item 3	Item 4	Item 5
ZVQPAQ	No	Yes	No	Yes					
ZVRFNL	No	Yes	No	Yes					
ZW7WP7	No	Yes	No	Yes					

Response Summary		Participants: 278			
<i>Were any of the recovered questioned bullets (Items 2-5) fired in the same firearm as the known bullets (Item 1)?</i>					
Responses		<u>Item 2</u>	<u>Item 3</u>	<u>Item 4</u>	<u>Item 5</u>
	Yes	2 (0.7%)	278 (100.0%)	2 (0.7%)	277 (99.6%)
	No	234 (84.2%)	0 (0.0%)	233 (83.8%)	1 (0.4%)
	Inc	42 (15.1%)	0 (0.0%)	43 (15.5%)	0 (0.0%)

Conclusions

TABLE 2

WebCode	Conclusions
23BTBR	The projectiles in Items 3 and 5 were fired in the same gun that fired the projectiles in Item 1. The projectiles in Items 2 and 4 bear class characteristics consistent with the projectiles in Item 1. However, due to insufficient reproducible individual characteristics, the projectiles in Items 2 and 4 could not be positively included or excluded as having been fired in the same gun that fired the projectiles in submission 1.
2B7WFN	The submitted fired bullets from items 2, 3, 4 and 5 were examined and microscopically compared to each other. Then they were compared to the test fired bullets from item 1. The bullets labeled as items 3 and 5 were identified as having been fired from the same firearm as the three bullets labeled as Item 1. Item 2 was identified as having been fired from the same (unknown) firearm as Item 4 but not from the same firearm as the bullets in Item 1.
2FG932	1. Exhibits 2 through 5 (.40 Bullets) were visually examined and microscopically compared to each other and to test bullets in Exhibit 1 (Three .40 Bullets). 2. Exhibits 3 and 5 were fired from the same firearm as Exhibit 1. 3. Exhibits 2 and 4 were fired from the same firearm, which was a different firearm than the one that fired Exhibits 1, 3 and 5.
2JXGDA	1. The bullets describe in Item 1, Item 3, and Item 5, are .40/10mm caliber, metal case type, with right rifling (R-6), were fired by the same firearm. September/10/2015. 2. The bullets describe in Item 2, and Item 4, are .40/10mm caliber, metal case type, with right rifling (R-6), were fired by the same firearm. September/10/2015
2KUWP7	It cannot be determined if the bullets marked Item 2 and Item 4 were or were not fired from the same firearm as the bullets marked Items 1, 3 and 5.
2LNMVL	All of the submitted evidence bullets are consistent with 40 caliber, full metal jacketed bullets and were fired from a barrel bearing six lands and grooves with a right-hand twist. The three test fired bullets from the Ruger P94DC pistol (Item 1) and the four individually packaged evidence bullets (Items 2, 3, 4, and 5) were microscopically compared to one another. Item 3 and Item 5 were identified as having been fired from the same firearm that produced the test fired bullets contained in item 1 (the Ruger Pistol). The bullets identified as items 2 and 4 display similar general rifling characteristics as the test fired bullets, but lack any matching individual stria suggesting that they were fired from a different firearm. A further inter-comparison of items 2 and 4 identified them as having been fired from the same unknown firearm.
2N4CUN	The bullets in Item #2 and Item #4 could not be identified as or excluded from having been fired in the same firearm as the bullets in Item #1 based on class characteristic similarities (caliber and rifling). The bullets in Items #3 and #5 were identified as having been fired in the same firearm as the bullets in Item #1.
39W9D4	Items 3 and 5 were fired in the same firearm as item 1 (identification). This conclusion was verified by Firearms Examiner [Name]. Items 2 and 4 were fired in the same firearm (identification). This conclusion was verified by Firearms Examiner [Name]. Items 2 and 4 could not be identified or eliminated as having been fired in the same firearm as Items 1, 3, and 5 (inconclusive). This conclusion was verified by Firearms Examiner [Name].
3DTWWW	Item 3 and Item 5 were identified as having been fired from the same firearm as Items 1A-1C based on the agreement of a combination of individual characteristics and all discernible class characteristics. Item 2 and Item 4 were eliminated as having been fired from the same firearm as Items 1A-1C due to the disagreement of individual characteristics. Item 2 was identified as having been fired from the same unknown firearm as Item 4 based on the agreement of a

TABLE 2

WebCode	Conclusions
	combination of individual characteristics and all discernible class characteristics.
3GKDTH	Conclusions: Two pistols are involved in the same crime scene. The bullet recovered from victim (ITEM 2) and bullet recovered from ceiling (ITEM 4) are firing by the same pistol. Bullet recovered from ceiling (ITEM 3) and recovered from the wall (ITEM 5) have been fired by the recovered pistol Ruger P94DC .40 caliber.
3H38VQ	1. Examinations showed that Item 3 and Item 5 were discharged from the recovered firearm. 2. Examinations showed that Item 2 and Item 4 were not discharged from the recovered firearm. 3. Examinations showed that Item 2 and Item 4 were discharged from the same unknown firearm, not the recovered firearm.
3HXUAF	All of the fired bullets in Items 1 through 5 are nominal .40 caliber, and have six conventionally rifled grooves of similar widths and right twist. Items 2 and 4: These bullets were microscopically compared to each other and to Item 1A. The fired bullets were identified as having been fired in the same unknown firearm, but not the Ruger pistol used to make the test-fired bullets of Item 1. Items 3 and 5: These bullets were microscopically compared to Item 1A. The bullets were identified as having been fired in the same Ruger pistol as Item 1A. In summary, Items 2 and 4 were fired in the same unknown firearm, and Items 3 and 5 were fired in the Ruger pistol.
3KKCGU	The bullets in Items 3 and 5 were fired from the same gun that fired the bullets in Item 1. The bulletes[sic] in Items 2 and 4 were fired from a second unknown gun.
3N3QVZ	Exhibits listing: 1 - (1) Three bullets fired using the recovered firearm (known). 2 - (2) Bullet recovered from victim (questioned). 3 - (3) First bullet recovered from the ceiling at the scene (questioned). 4 - (4) second bullet recovered from the ceiling at the scene (questioned). 5 - (5) Bullet recovered from the wall at the scene (questioned). Findings: Comparison microscope examinations were conducted on the evidence listed above. The findings of this examiner are the following: 1. Projectiles 2, 3, 4, and 5 are .40 caliber class copper jacketed bullets which are normally loaded in .40 S&W and 10mm cartridges. 2. Projectiles 3 and 5 were fired in the same gun as Exhibit 1, the bullets fired from the recovered .40 S&W Ruger model P94DC pistol. 3. Projectiles 2 and 4 were fired in the same gun, a different gun from Exhibit 1. 4. The following is an investigative lead only and not intended to exclude all other makes of firearms. Based on class characteristics of projectiles 2 an[sic] 4 the possible firearms are .40 S&W pistols manufactured by Beretta, Fabrique Nationale, FN/Browning, Ruger, Springfield, and Taurus.
3QTXEC	Bullet Analysis: Items 2, 3, 4 and 5 are 40 caliber class bullets based upon the diameter. Opinion/Interpretation: Items 2, 3, 4 and 5 are consistent with bullets loaded in .40 S&W and 10mm Auto caliber cartridges based upon weight and style. Items 2 and 4, the bullets, exhibit characteristics found in (but not limited to) the following firearms: Ruger, Taurus, Springfield Inc., Republic Arms, Heckler & Koch and Astra .40 S&W caliber firearms; Heckler & Koch 10mm Auto caliber firearms. The firearms listed are those most commonly encountered in casework. Methodology - Comparison Microscopy. Items 3 and 5, the bullets, were fired through the barrel of the same firearm as Item 1, the bullets identified to be fired from the recovered firearm, based upon corresponding class and individual microscopic characteristics. Items 2 and 4, the bullets, were not fired through the barrel of the same firearm as Item 1, the bullets identified to be fired from the recovered firearm, based upon different individual microscopic characteristics. Items 2 and 4, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics.
3YQNRM	Microscopic comparison conducted with the following results: B-2 (Item #3) and B-4 (Item #5) were fired from P-1. B-1 (Item #2) and B-3 (Item#4) were fired from the same firearm, not

TABLE 2

WebCode	Conclusions
	P-1.
47YLVW	item 3 and item 5 bullets were fired in the some firarm as the known bullets (item 1). item 2 and item 4 were fired in the some weapon, but not the firearm that fired the known bullets (item 1) [sic]
4AYVY8	The first bullet recovered from the ceiling at the scene identified as Item 3 and the bullet recovered from the wall at the scene identified as Item 5 were fired by the same firearm as the known bullets identified Item 1. The bullet recovered from the victim identified as Item 2 and the second bullet recovered from the ceiling at the scene identified as Item 4 were fired by the same firearm, but were not fired by the same firearm as the known bullets identified Item 1.
4EVCHT	Items 2 and 4 were microscopically examined and compared with the test fired bullets Item 1. Based on the observed disagreement of individual characteristics, Items 2 and 4 are eliminated as having been fired from the same firearm as the tests Item 1. Items 2 and 4 were microscopically compared with each other. Base on the observed agreement of their class characteristics and sufficient agreement of individual characteristics, Item 2 and 4 are identified as having been fired from the same firearm. Items 3 and 5 were microscopically examined and compared with the test fired bullets Item 1. Based on the observed agreement of their class and sufficient agreement of individual characteristics, Item 3 and 5 are identified as having been fired from the same firearm as the test fired bullets Item 1.
4J6DW6	2.1: The bullets marked 196228/15 '3' and 196228/15 '5' were fired from the same firearm as the bullets respectively marked 196228/15 '1a' to '1c'. 2.2: The bullets marked 196228/15 '2' and 196228/15 '4' were fired from a second firearm.
4M93FQ	1. Examinations showed Item 3 (marked M-2) and Item 5 (marked M-4) were discharged from the Ruger P94DC. 2. Examinations showed Item 2 (marked M-1) and Item 4 (marked M-3) were discharged from the same unknown firearm. 3. Examinations showed Item 2 (marked M-1) and Item 4 (marked M-3) were not discharged from the Ruger P94DC due to differences in individual characteristics.
4MQETP	The Item #3 and Item #5 bullets matched the test bullets (Item #1) of, and were discharged by, the 40 S&W caliber Ruger pistol. The Item #2 and Item #4 bullets matched each other and were discharged by the same firearm. The bullets were not discharged by the 40 S&W caliber Ruger pistol. The identifications were based on the agreement of individual characteristics observed during the microscopic comparison.
4TDAEG	Items (3, 5) and test fires (1, 1, 1) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, items (3, 5) and test fires (1, 1, 1) are identified as having been fired from the above firearm (item 1). Items (2) and item (4) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, item (2) and item (4) are identified as having been fired from a second gun.
63J88Q	Items 3 and 5 bullets were fired from the same firearm as the Item 1 test fires. Items 2 and 4 bullets were fired from a second firearm. These Items are consistent with being 40/10mm caliber bullets with 6 lands and grooves having a right hand twist. A list of possible firearms that may have fired these Items includes but is not limited to: Astra, Fabrique Nationale, H&K, KSN Industries, Republic Arms, Ruger, Springfield & Taurus.
68P8Y8	3. On 2015-08-07 during the performance of my official duties I received a sealed evidence bag with number PA4001486493 from Case Administration of the Ballistics Section, containing the following item: 3.1: One (1) sealed white cardboard box, marked "2015 CTS Forensic

TABLE 2

WebCode	Conclusions
	<p>Testing Program Test No. 15-527: Firearms Examination Sample Pack: F2", containing the following items: 3.1.1: One (1) sealed white cardboard box, marked "Item 1", containing the following exhibits: 3.1.1.1: Three (3) 10mm/.40 calibre fired bullets marked by me ""173685/15" each and "1A, "1B" and "1C" respectively. 3.1.2: One (1) sealed white cardboard box, marked "Item 2", containing the following exhibits: 3.1.2.1: One (1) 10mm/.40 calibre fired bullet marked by me "173685/15 2". 3.1.3: One (1) sealed white cardboard box, marked "Item 3", containing the following exhibits: 3.1.3.1: One (1) 10mm/.40 calibre fired bullet marked by me "173685/15 3". 3.1.4: One (1) sealed white cardboard box, marked "Item 4", containing the following exhibits: 3.1.4.1: One (1) 10mm/.40 calibre fired bullet marked by me "173685/15 4". 3.1.5: One (1) sealed white cardboard box, marked "Item 5", containing the following exhibits: 3.1.5.1: One (1) 10mm/.40 calibre fired bullet marked by me "173685/15 5". 4. The intention and scope of this forensic examination comprise the following: 4.1: The examination and identification of fired bullets. 4.2: Microscopic individualization of fired bullets. 5. I examined the fired bullets mentioned in paragraphs 3.1.1.1, 3.1.2.1, 3.1.3.1, 3.1.4.1 and 3.1.5.1 and compared the individual and class characteristics markings transferred to them by firearm components during the firing process using a comparison microscope and found: 5.1: The bullets mentioned in paragraphs 3.1.2.1 and 3.1.4.1 were fired from the same firearm. 5.2: The bullets mentioned in paragraph 3.1.2.1 and 3.1.4.1 were not fired from the same firearm as the bullets mentioned in paragraphs 3.1.1.1. 5.3: The bullets mentioned in paragraph 3.1.3.1 and 3.1.5.1 were fired from the same firearm as the bullets mentioned in paragraphs 3.1.1.1.</p>
694LGP	<p>Submitted questioned bullets of ITEM 3 and ITEM 5 were fired from the same firearm that fired known bullets of ITEM 1. Submitted questioned bullets of ITEM 2 and ITEM 4 were fired from same firearm, but NOT from the firearm that fired known bullets of ITEM 1.</p>
69HX6L	<p>MICROSCOPIC COMPARISONS OF EVIDENCE BULLET SPECIMENS ITEMS 2 THROUGH 5 WITH TEST FIRED BULLETS FROM K1 RUGER (ITEM 1) REVEALED THE FOLLOWING: EVIDENCE BULLETS ITEMS 3 AND 5 WERE FIRED WITH THE SAME FIREARM (K1 RUGER) THAT FIRED THE BULLETS IN ITEM 1. EVIDENCE BULLETS ITEMS 2 AND 4 WERE FIRED WITH THE SAME UNKNOWN FIREARM; A DIFFERENT FIREARM THAN THE FIREARM (K1 RUGER) THAT FIRED THE BULLETS IN ITEM 1 DUE TO DIFFERENT INDIVIDUAL MICROSCOPIC MARKINGS PRESENT. SHOULD ANOTHER SUSPECTED FIREARM BE RECOVERED PLEASE SUBMIT IT IN REFERENCE TO THE ABOVE CC#.</p>
6EPHDD	<p>Four bullets have been recovered from the victim and scene, placed in items #2, 3, 4 and 5. They have been compared to the bullets fired in the .40 Ruger P94DC found on the suspect. The bullets of the items #3 and 5 were fired in this pistol. The bullets of the items #2 and 4 were not fired in this pistol. These were fired in one same pistol, of the same caliber.</p>
6FMNPQ	<p>The fired bullets in Items 2, 3, 4, and 5 were microscopically examined in conjunction with the test fired bullets in Item 1. Based on these comparative examinations, it was determined that: A) The bullets in Item 3 and Item 5 had been fired through the same barrel as those in Item 1. B) The bullets in Item 2 and Item 4 bear the same class characteristics as those present on the bullets in Item 1; however, no similar individual characteristics were found to link the bullets in Item 2 and Item 4 with those in Item 1. The fired bullets in Item 2 and Item 4 were also microscopically examined in conjunction with one another. Based on these comparative examinations, it was determined that both of these bullets had been fired through the barrel of the same 40 caliber firearm.</p>
6KHLCV	<p>The Item 1 test fired bullets were microscopically compared to Items 2 and 4, finding class characteristic agreement, but insufficient individual characteristic correspondence needed for a meaningful conclusion. Items 2 and 4 could not be identified to nor excluded from being fired</p>

TABLE 2

WebCode	Conclusions
	<p>in the same firearm that fired the Item 1 bullets. The Item 1 test fired bullets were microscopically compared to Items 3 and 5, finding class characteristic and significant individual characteristic agreement. It was concluded that Items 3 and 5 were fired in the same firearm that fired the Item 1 bullets. Items 2 and 4 were microscopically inter-compared, finding class characteristic and significant individual characteristic agreement. It was concluded that Items 2 and 4 were fired in the same firearm. Due to the inconclusive results indicated through the comparison of the Item 1 test fired bullets to Items 2 and 4, the possibility exists that a second firearm with class characteristics similar to the listed Ruger pistol was present at the shooting scene.</p>
6PTEFV	<p>The bullets marked as 196238/15 (1)a-(1)c, (3) and (5) were fired from the same firearm. The bullets marked as 196238/15 (2) and (4) were fired from a second firearm.</p>
6RJJ93	<p>1. Fired bullets (test) marked Item 1 and fired bullets marked Item 3 and Item 5 were fired from the same firearm. 2. Fired bullets marked Item 2 and 4 were fired from the same firearm, however they were negative with the bullets mentioned in 1. (Second unknown firearm)</p>
6TTQCU	<p>I examined Submission #1 and determined it to contain three test-fired bullets (Item 1-1) from a Ruger pistol (model P94DC, .40 S&W caliber, serial number unknown), and four fired nominal .40 caliber bullets (Items 1-2 through 1-5). The fired bullets (Items 1-2 through 1-5) had been designed with full-metal copper jackets and lead cores, and weighed approximately 180 grains. The bullets had been fired through a conventionally-rifled barrel having six lands and grooves with a right-hand twist. I microscopically compared the three test-fired bullets to each other and found individual, firearm-produced markings to be reproducible and sufficient for identification. I microscopically compared a test-fired bullet from the Ruger pistol to Items 1-2 and 1-4. While I found agreement in the class characteristics, I found sufficient disagreement in the individual characteristics, including the striations in the land impressions to conclude that these bullets were not fired in the Ruger pistol. I documented my comparisons with notes and photographs. I microscopically compared Item 1-2 and 1-4. I found agreement in all class characteristics. I also found sufficient agreement for identification in the individual characteristics, including striations in the land impressions, to conclude that these bullets were fired in the same unknown firearm. I microscopically measured the widths of the land and groove impressions for both these bullets and referenced them to the 2010 version of the General Reference Characteristics (GRC) File. A list of possible firearms is too large for investigative purposes. However, most of the listed firearms were Beretta, Heckler & Koch, Ruger, Springfield, and Taurus .40 S&W pistols. Any suspected firearm should be submitted for examination.</p>
76Y2GW	<p>Item #3 and Item #5 bullet specimens were fired from Item #1 pistol. Item #2 and Item #4 bullet specimens were fired from the same firearm (not Item #1).</p>
796GWE	<p>Items 3 and 5 were fired from the same firearm as Item 1 based on matching class and individual characteristics, including matching striae within the groove impressions. Items 2 and 4 were fired from the same firearm based on matching class and individual characteristics, including matching striae within the groove impressions. Items 2 and 4 were not fired in the same firearm as Items 1, 3 and 5 based on significant disagreement of individual characteristics within the groove impressions.</p>
7B3AJH	<p>QB-2 (Item 3) and QB-4 (Item 5) bear marks consistent with having been fired from the same firearm as T-1, T-2 and T-3 (Item 1). QB-1 (Item 2) and QB-3 (Item 4) bear marks consistent with having been fired from the same firearm, firearm unknown. QB-1 and QB-3 cannot be identified or eliminated as having been fired from the same firearm as T-1, T-2, T-3, QB-2 and QB-4.</p>

TABLE 2

WebCode	Conclusions
7E8XY8	1: (3), Test fired bullets from a Ruger P94DC. 2: (1), fired bullet. 3: (1), fired bullet. 4: (1), fired bullet. 5: (1), fired bullet. Items 1 (test fired bullets), 3, and 5 were microscopically examined and compared. Based on observed agreement of class characteristics and sufficient agreement of individual characteristics, Items 3 and 5 were identified as having been fired from the same firearm that fired Item 1 (Ruger P94DC). Items 1 (test fired bullets), 2, and 4 were microscopically examined and compared. Agreement of class characteristics was observed. However, there is insufficient agreement or disagreement of individual characteristics to either identify or eliminate the bullets as having been fired from the same firearm that fired Item 1 (Ruger P94DC). Items 2 and 4 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.
7EKE8F	The items 2 & 4 bullets were identifies[sic] as having been fired in the same firearm. The items 1, 3 & 5 bullets were identified as having been fired in the same firearm.
7KA4PG	Comparison with test fired bullets (Item 1) taken from the exhibit pistol and exhibit Items 2-5 inclusive showed the following- That the exhibit fired bullets, Items 2 and 4 were discharged in the same pistol but not the exhibit pistol and that the exhibit fired bullets, Items 3 and 5 were both discharged in the exhibit pistol.
7L94Q3	The bullets in Items 3 and 5 were determined to have been fired from the same firearm as the bullets in Item 1. The bullets in Items 2 and 4 were determined to have been fired from a different single firearm.
7P7MTZ	Items 2 through 5 were examined and identified as four (4) fired .40 S&W/10mm Auto caliber copper jacketed bullets exhibiting six (6) land and groove impressions with a right twist. Items 2 through 5 were microscopically compared to one another and the bullets test fired from Item 1. As a result of microscopic comparison, it was concluded that Items 3 and 5 were identified as having been fired from Item 1. Items 2 and 4 were identified as having been fired from the same firearm; however, were eliminated as having been fired from Item 1 due to differences of individual characteristics. Possible firearms that produce rifling characteristics similar to those exhibited on Items 2 and 4 include, but are not limited to, 10mm Auto caliber firearms marketed by Heckler & Koch; .40 S&W caliber firearms marketed by Astra, Fabrique Nationale, Heckler & Koch, Heritage, KSN Industries, Republic[sic] Arms, Ruger, Springfield Inc., and Taurus.
7UGLB9	After examining item #1 and successfully test firing ammunition, I certify that it is a FIREARM as defined by the [State Law]. The approximate barrel and overall length measurements of this firearm are 3 7/8 inches and 7 1/4 inches, respectively. After examining items #2, #3, #4 and #5, I certify that this evidence is AMMUNITION as defined by the [State Law]. After microscopic comparison, it was determined that items #3 and #5 were fired from item #1 based on sufficient agreement of class and individual characteristics of land impression marks.
836YND	A microscopic examination and comparison of the above evidence revealed the following: Deformed bullets (3, 5) and test fires (1,1,1) are identified as having been discharged from the SAME firearm, based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics. Deformed bullets (2, 4) are identified as having been discharged from a SECOND gun, based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics.
8BHNN7	First we compared the 3 known bullets from Item 1 to each other. They had enough matching striae to proceed in comparisons with the questioned bullets. After comparing the questioned bullets to the known bullets, we reach the following results. Item 3 and Item 5 have been fired by the same firearm as Item 1. Item 2 and 4 have NOT been fired by the same firearm as Item

TABLE 2

WebCode	Conclusions
	1. But Item 2 has most probably been fired by the same (unknown) firearm as Item 4.
8CD8TT	The first bullet recovered from the ceiling, Item 3 (Lab Item 001-03), and the bullet recovered from the wall, Item 5 (Lab Item 001-05), were fired from the .40 S&W caliber Ruger pistol, Item 1 (Lab Item 001-01). The bullet from the victim, Item 2 (Lab Item 001-02), and the second bullet recovered from the ceiling, Item 4 (Lab Item 001-04), were not fired from the Ruger pistol, Item 1 (Lab Item 1 001-01), but were fired from the same unknown nominal .40 caliber firearm.
8CDC6G	Items 2 and 4 were 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. Items 3 and 5 were identified as being fired in the same firearm as Items 1A, 1B, and 1C based on sufficient agreement of individual characteristics within the land impressions.
8JWQM7	The findings show with certainty that Item 3 and 5 have been fired in the same firearm as the known bullets (Item 1), (Level +4). The findings indicate that Item 2 and 4 have NOT been fired in the same firearm as the known bullets (Item 1), (Level -2). The findings show with certainty that Item 2 and 4 have been fired in the same firearm, (Level +4).
8KCRYV	Examination of the two (2) fired full metal jacket bullets (Items 2 & 4) revealed they are 40 caliber and fired through a firearm barrel rifled with six (6) lands and grooves with a right hand twist. Further examination of Items 2 & 4 revealed they were fired through the same firearm barrel. Examination of the two (2) fired full metal jacket bullets (Items 3 & 5) revealed they are 40 caliber and fired through a firearm barrel rifled with six (6) lands and grooves with a right hand twist. Further examination of Items 3 & 5 with the submitted test fired bullets (Item 1) revealed Items 3 & 5 were fired through the same firearm barrel as Item 1.
8KPKBP	The four bullets submitted as Items 2, 3, 4 and 5 were microscopically compared to each other and to the said test fired bullets submitted as item 1 (three Bullets discharged from the suspect's weapon) and it was determined that: All the bullets have six (6) lands and six (6) grooves with right rotation. Two (2) of the bullets (Items 3 and 5) were identified as having been fired in the suspect's firearm (item 1). Two (2) of the bullets (Items 2 and 4) had been fired through the same barrel by using a second firearm.
8NTGXX	Items 3 and 5 were fired in the same firearm as Item 1 (identification). This conclusion was verified by Firearms Examiner [Name]. Items 2 and 4 were fired in the same firearm (identification). This conclusion was verified by Firearms Examiner [Name]. Items 2 and 4 could not be identified or eliminated as having been fired in the same firearm as Items 1, 3, and 5 (inconclusive). This conclusion was verified by Firearms Examiner [Name].
8WH24W	The test fired bullets in Item 1 were microscopically examined in conjunction with the bullets in Items 2-5. Based on these comparative examinations and observed class and individual characteristics, it was determined that: A) The bullets in Items 3 and 5 had both been fired through the barrel of the same firearm as the test fired bullets in Item 1. B) The bullets in Items 2 and 4 bear no marks to link them to the same firearm as test fired bullets in Item 1 or the bullet in Items 3 and 5. C) The bullets in Items 2 and 4 had both been fired in an unknown firearm.
96UKWU	All items were microscopically examined and compared with the following conclusions: Item 3, Item 5 had been fired in the same firearm as the known bullets (Item 1). Item 2, Item 4 had been fired by the same firearm but not the recovered one.
98Z3YW	Items 3 and 5 were fired in Item 1 (identification). This conclusion was verified by Firearms Examiner [Name]. Items 2 and 4 could not be identified or eliminated as having been fired in Item 1 (inconclusive). This conclusion was verified by Firearms Examiner [Name].

TABLE 2

WebCode	Conclusions
99RXT6	1) These tests were used for comparison. 2) Items #2 and #4 were fired in the same firearm, but that firearm was not the firearm that fired Items #1, #3, and #5. This bullet is of the 40 caliber class and displays rifling characteristics of six lands and grooves with a right hand twist. A list of firearms that could have fired this bullet would be too extensive to be of much assistance in the search for a suspect firearm. 3) Items #3 and #5 were fired in the same firearm that fired Item #1. 4) Items #2 and #4 were fired in the same firearm, but that firearm was not the firearm that fired Items #1, #3, and #5. This bullet is of the 40 caliber class and displays rifling characteristics of six lands and grooves with a right hand twist. A list of firearms that could have fired this bullet would be too extensive to be of much assistance in the search for a suspect firearm. 5) Items #3 and #5 were fired in the same firearm that fired Item #1.
9EZAWK	MICROSCOPIC COMPARISON EXAMINATIONS OF ITEM 1 THROUGH ITEM 5 REVEALED; ITEM 1 (test bullets), ITEM 3 (evidence bullet) AND ITEM 5 (evidence bullet)WERE FIRED WITH THE SAME FIREARM. ITEM 2 (evidence bullet) AND ITEM 4 (evidence bullet) WERE FIRED WITH THE SAME UNKNOWN FIREARM BUT NOT THE SAME FIREARM AS ITEM 1, ITEM 3 AND ITEM 5. ITEM 1, ITEM 3 AND ITEM 5 BEAR DIFFERENT MICROSCOPIC MARKINGS THAN THOSE ON ITEM 2 AND ITEM 4
9HZGDB	Based on the agreement of discernible class characteristics and sufficient matching individual detail, the fired bullets Item 3 and Item 5 were identified as having been fired from the same firearm as the fired bullets from Item 1. Based on the agreement of discernible class characteristics and sufficient matching individual detail, the fired bullets Item 2 and Item 4 were identified as having been fired from the same firearm. Based on significant disagreement of class and/or individual characteristics, the fired bullets Item 2 and Item 4 were eliminated as having been fired from the same firearm as the fired bullets from Item 1.
9LHTZK	The projectiles in Items 3 and 5 were fired in the same gun that produced the test fires in Item 1. The projectiles in Items 2 and 4 bear class characteristics consistent with those produced by the gun that produced the test fires in Item 1. However, due to insufficient reproducible individual characteristics, the projectiles in Items 2 and 4 could not be positively included or excluded as having been fired in the same gun that produced the test fires in Items 1 to the exclusion of all other firearms with the same class characteristics.
9P2N3C	Items 3 and 5 were identified as having been fired from the same firearm as the bullets contained in Item 1. Items 2 and 4 were not fired from the same firearm as the bullets contained in Item 1. Items 2 and 4 were fired from the same firearm.
AC9K34	The Item 1, 3 and 5 bullets were identified, within the limits of practical certainty, as having been fired from the same firearm. The Item 2 and 4 bullets were identified, within the limits of practical certainty, as having been fired from the same firearm. Two different firearms are represented by the submitted items.
AHEGL4	1. Item 3 and Item 5 were identified as having been fired in the exhibit Ruger P94DC 40 Smith & Wesson calibre pistol. 2. Item 2 and Item 4 were eliminated as having been fired in the exhibit Ruger P94DC 40 Smith & Wesson calibre pistol. 3. Item 2 and Item 4 were identified as both having been fired in the same firearm that has not as yet been received for test firing.
ALDW4E	The Item 1-5 fired bullets were examined and microscopically compared to each other with the following results. Items 1, 3 and 5 were identified as having been fired from the same firearm. Items 2 and 4 were identified as having been fired from the same unknown 40 S&W/10mm caliber firearm. Items 2 and 4 were eliminated as having been fired from the same firearm as Items 1, 3 and 5 based on differences in individual characteristics.
ALEF9G	The bullets in Items #3 and #5 were identified as having been fired in the same firearm as the

TABLE 2

WebCode	Conclusions
	bullets in Item #1. The bullets in Items #2 and #4 could not be identified as or excluded from having been fired in the same firearm as the bullets in Item #1 based on class characteristic similarities (caliber and rifling).
APBZAF	The Items 2, 3, 4, and 5 bullets were compared to the Items 1A-1C bullets. It was determined the Items 3 and 5 bullets were fired from the same weapon as the Items 1A-1C bullets. It was determined the Items 2 and 4 bullets were not fired from the same weapon as the Items 1A-1C bullets. Items 2 and 4 were compared to each other and it was determined they were fired from the same weapon
AQ6Y3X	[No conclusions reported.]
AR3DHQ	The full metal jacketed (FMJ) bullets (items 1, 3, 5) were fired by the same firearm, reportedly a Ruger P94DC handgun. The two FMJ bullets (items 2, 4) were fired by the same firearm. The two FMJ bullets (items 2, 4) were compared to the other FMJ bullets (items 1, 3, 5). The results of these comparisons were inconclusive - it was not determined if the bullets (items 2, 4) were fired by the same firearm as the other FMJ bullets (items 1, 3, 5) due to disagreement of individual marks insufficient for elimination in the presence of similar GRC.
AX79AD	made the comparison of item 1, 2, 3, 4 and 5, established that item 3 and 5 were fired in the same gun that shot the bullets in Item 1. the bullets identified as item 2 and 4 were fired by the same gun, but different from the item 1
AYKNPZ	Item 1, Item 3 and Item 5 were all discharged from the same firearm. Item 2 and Item 4 were both discharged from another firearm.
B8ANVN	Items QB-(2-5) were microscopically compared to each other and to test shots from QF-1 (Item 1). Items QB-3 and QB-5 were identified as having been fired from QF-1 due to sufficient agreement of individual characteristics in the land impressions. Items QB-2 and QB-4 were eliminated as having been fired from QB- 1 due to different individual characteristics in the land impressions. Items QB-2 and QB-4 were identified as having been fired from the same (unknown) firearm due to sufficient agreement of individual characteristics in the land impressions.
B8XVAA	The firearm that fired the item 1 bullets is identified with practical certainty as having fired items 3 and 5. The firearm that fired the item 1 bullets is eliminated from having fired items 2 and 4. Items 2 and 4 are identified with practical certainty as having been fired in the same unknown firearm.
BDG6DC	Bullets (3, 5) and test fires (1, 1, 1) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, bullets (3, 5) and test fires (1, 1, 1) are identified as having been discharged from the same firearm. Bullets (2, 4) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, bullets (2, 4) are identified as having been discharged from ANOTHER firearm.
BDHXBK	Two bullets (Item 3 and Item 5) were fired in the recovered Ruger P94DC .40 pistol. Two bullets (Item 2 and Item 4) were fired in an other unknown gun. These two bullets were fired in the same unknown gun.
BGWX46	1. Item-3 and Item-5 are fired from Ruger P94DC .40 handgun. 2. Item-2 and Item-4 are fired from another handgun.
BPCAPJ	On items 3 and 5 class characteristics and individual characteristics match with item 1. Therefore item 3 and 5 have been fired with the same gun as item 1. On items 2 and 4 class characteristics match with item 1, but individual characteristics does not match with item 1.

TABLE 2

WebCode	Conclusions
	Therefore items 2 and 4 have not been fired with the sam[sic] gun as item 1.
BRDKD7	Items 3 and 5 bullets were fired by the same firearm that fired Item 1 bullets. Items 2 and 4 bullets were fired by the same firearm. These bullets were not fired by the same firearm that fired Items 1, 3 and 5 bullets. These bullets are consistent with bullets commonly found loaded in 40 S&W and 10mm Auto caliber cartridges. 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.
BRXADQ	Examination and microscopic comparison identified the exhibit 3 and exhibit 5 bullets as being fired from the same firearm that fired the exhibit 1 bullets. Examination and microscopic comparison identified the bullets from exhibit 2 and exhibit 4 as being fired from the same firearm, but not the same firearm that fired exhibit 1 bullets.
BUAP8R	The Items 3 and 5 bullets matched the Item 1 bullets and were discharged from the same firearm. The identifications were based on agreement of individual characteristics observed during a microscopic comparison. The Items 2 and 4 bullets were eliminated as having been discharged from the same firearm as the Item 1 bullets. The elimination was based on differences in their individual characteristics observed during a microscopic comparison.
BYT82G	The reference projectiles from the Ruger pistol, specimen #1, were compared to the copper jacketed projectiles, specimens #2 through #5, Microscopic examination and comparison revealed the following: Specimens #3 and #5 were fired from the Ruger pistol, specimen #1. Specimens #2 and #4 were not fired from the Ruger pistol; specimen #1, due to differences in the individual striations; however, they were fired from the same weapon. Specimens #2 and #4 were consistent with .40 caliber class ammunition (which includes .40 S&W) and were fired from the barrel of a firearm that possessed six lands and grooves with a right twist.
BYXH4E	On examination, I found: i. The characteristic marks of the known bullets Item 1 and the characteristic marks of the recovered bullets Item 3 and Item 5 to be similar. ii. The characteristic marks of the test fired bullets Item 1 to be dissimilar to the characteristic marks of the recovered bullets Item 2 and Item 4 to be similar. Therefore, I am of the opinion that the: i. Recovered bullets Item 3 and Item 5 were fired from the same firearm that fired the known bullets Item 1. ii. Recovered bullets Item 2 and Item 4 were not fired from the same firearm that fired the known bullets Item 1.
BZBAWW	The fired bullets mentioned in Item 1; Item 3 and Item 5 were fired from the same firearm. The fired bullets mentioned in Item 2 and Item 4 were fired from the same firearm. The fired bullets mentioned in Item 2 and Item 4 were not fired from the same firearm firearm[sic] as the fired bullets mentioned in Item 1.
C3A2E7	The fired bullets, items 3 and 5, were identified as having been fired from the same firearm as the test bullets, item 1. The fired bullets, items 2 and 4, were identified as having been fired from one single firearm, but not the firearm that fired the test bullets, item 1. These bullets are most consistent with bullets commonly loaded in 40 S&W or 10mm Auto caliber cartridges. Manufacturers of firearms known to exhibit general rifling characteristics similar to these bullets include, but are not limited to, the following: 40 S&W caliber: Astra, Fabrique Nationale, FN/Browning, Heckler & Lock, Heritage, KSN Industries, Republic Arms, Ruger, Springfield Inc., and Taurus. 10mm Auto caliber: Heckler & Koch
C3AUBF	Items #3 and #5 were both fired from the same firearm as Item #1. Items #2 and #4 were both fired from the same firearm not Item #1.
C6DPUH	1. The bullets identified as Item 3 and 5 belong to .40 ammunition, and were fire with the handgun that generated Item 1 (known one). 2. The bullets identified as Item 2 adn[sic] 4

TABLE 2

WebCode	Conclusions
	belong to .40 ammunition, and were fire with a same handgun different than the one that generated Item 1.
C9FQUF	The Item 3 and Item 5 (bullets) were compared to the Item 1 (testfires) using a comparison microscope. The Item 3 and the Item 5 bullet were both identified as having been fired in the Ruger P94DC 40 caliber pistol using the Item 1 testfires. The Item 2 and Item 4 (bullets) were compared to the Item 1 (testfires) using a comparison microscope. Due to a difference in individual characteristics observed during microscopic comparison, the Item 2 and Item 4 (bullets) were eliminated as having been fired from the Ruger P94DC using the Item 1 testfires. The Item 2 and the Item 4 (bullets) were both fired in the same unknown firearm.
CAB9WG	[No conclusion reported.]
CABZDW	The bullets Item 3 and Item 5 are fired in the handgun Ruger P94DC. The bullets Item 2 and Item 4 are not fired in the recoverd[sic] handgun Ruger P94DC.
CAWQ7H	Items 1, 3, and 5 were fired by the same firearm. (Ruger P94DC .40 handgun). Items 2 and 4 were fired by a second firearm. Items 2 and 4 are 40 caliber projectiles typically loaded in ammunition designated 40 S&W or 10 mm Auto. Items 2 and 4 were fired from a firearm with rifling 6 right. The make of firearm that may have fired items 2 and 4 includes, but is not limited to, the following: KSN Industries, Taurus, FN/Browning, Heritage, Springfield Inc. Republic Arms, Heckler & Koch, Ruger, Astra, Fabrique Nationale.
CDTDR4	Bullet Analysis: Items 2, 3, 4, and 5 are 40 caliber class bullets based upon the diameter. Opinion/Interpretation: Items 2, 3, 4 and 5 are consistent with bullets loaded in .40 S&W and 10mm Auto caliber cartridges based upon the weight and style. Items 2 and 4, the bullets, exhibit characteristics found in (but not limited to) the following firearms: caliber .40 S&W- Astra, Beretta, Fabrique Nationale, Heckler & Koch, Ruger, Springfield Inc., and Taurus; caliber 10mm Auto- Heckler & Koch. *Note: the firearms listed are those most commonly encountered in casework. Methodology- Comparison Microscopy. Items 3 and 5, the bullets, were fired through the barrel of Item 1, the Ruger pistol, based upon corresponding class and individual microscopic characteristics. Items 2 and 4, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic chararacteristics[sic]. Items 2 and 4, the bullets, were not fired through the barrel of Item 1, the Ruger pistol, based upon different individual microscopic characteristics.
CDV23H	Items 3 and 5 were fired from the same firearm as test fires Item 1 (Ruger, P94DC, .40 caliber handgun). Items 2 and 4 were fired from a second firearm. Items 2 and 4 are consistent with .40/10 mm caliber projectiles fired from a firearm conventionally rifled 6 right, typical of, but not limited to, firearms manufactured by the following: Astra, Fabrique Nationale, Heckler & Koch, Heritage, KSN Industries, Republic Arms, Ruger, Springfield Inc. and Taurus.
CENU7L	Items 2-5 were compared microscopically with each other and Item 1. These comparison results are: -Items 3 and 5 are Identifications with each other and Item 1 due to the sufficient quantity and quality of matching individual characteristics in the rifling striations. This means that Items 3 and 5 were fired from the seized firearm. Items 2 and 4 are Eliminations with Item 1 due to the sufficient quantity and quality of different individual characteristics in the rifling striations. This means that Items 2 and 4 were not fired from the seized firearm. Items 2 and 4 are Identifications with each other due to the sufficient quantity and quality of matching individual characteristics in the rifling striations. This means that Items 2 and 4 were fired from the same firearm (that is not yet identified).
CH73GU	The bullets mentioned in 3.2 marked as Item 2 and Item 4 were fired in from the first firearm. The bullets mentioned in 3.1 to 3.2 marked as 1A-1C, Item 3 and Item 5 were fired from the

TABLE 2

WebCode	Conclusions
	second firearm.
CJYTM9	The known bullets Item 1 and the questioned bullets Item 3 and Item 5 have matching individual markings in the land and grooves, so it is undoubtedly proved, that the bullets Item 3 and Item 5 were fired from the same firearm as the bullets Item 1. The known bullets Item 1 and the questioned bullets Item 2 and 4 have different individual markings in the land and grooves, so it is undoubtedly proved, that the bullets Item 2 and 4 were not fired in the same firearm as the bullets Item 1 and the bullets Item 3 and 5. The questioned bullets Item 2 and 4 have with each other matching individual markings in the land and grooves, so it is undoubtedly proved, that these bullets were fired in the same unknown firearm.
CQ6HB9	Items 3 and 5 were microscopically examined and identified as having been fired from the Item 1 firearm based on agreement of the combination of individual characteristics and all discernible characteristics. Items 2 and 4 were also microscopically examined and identified as having been fired from the same unknown firearm based on agreement of individual characteristics and all discernible class characteristics, but were eliminated as having been fired from the Item 1 firearm due to disagreement of individual characteristics.
CVBDRM	The Items 01-01, 01-03, and 01-05 fired bullets were identified as having been fired from the same unknown firearm, which is reportedly a 40 caliber class Ruger pistol, Model P94DC. The Items 01-02 and 01-04 fired bullets were identified as having been fired from the same unknown firearm. The Items 01-02 and 01-04 bullets were unable to be identified or eliminated as having been fired from the same unknown firearm as the Items 01-01, 01-03, and 01-05 bullets due to a lack of reproducible marks.
CZ747X	Item 1 consisted of three .40 S&W bullets that were reportedly test-fired through a Ruger P94DC pistol. They had full metal copper jacketing and conventional right twist rifling of six lands and grooves. They were arbitrarily labeled as 1A, 1B, and 1C for examination purposes. The three bullets were microscopically intercompared and found to have excellent reproducibility of individual detail. Items 3 and 5 were two nominal .40 caliber bullets with copper full metal jacketing and each was fired through a barrel with conventional right twist rifling of six lands and grooves. They were compared to the test-fires (Items 1A, 1B, and 1C) using a comparison microscope. Agreement of class characteristics and individual detail sufficient for an identification were observed. Items 3 and 5 were fired by the Ruger P94DC pistol. Items 2 and 4 were two nominal .40 caliber bullets with copper full metal jacketing and each was fired through a barrel with conventional right twist rifling of six lands and grooves. They were compared to each other using a comparison microscope. Agreement of class characteristics and individual detail sufficient for an identification were observed. Items 2 and 4 were fired by the same firearm. Items 2 and 4 were then microscopically compared to the test-fires (Items 1A, 1B, and 1C), Item 3, and Item 5. While class characteristics were the same, significant differences in individual detail were observed to conclude that Items 2 and 4 were not fired by the Ruger P94DC pistol (elimination).
D2GACM	Agency Item 3 and Agency Item 5 were fired in the same firearm as the three test fires (Agency Item 1). Agency Item 2 and Agency Item 4 were fired in the same firearm; however, they were not fired in the same firearm as Agency Items 1, 3, and 5. Agency Items 2 and 4 are consistent with .40 S&W or 10mm Auto caliber projectiles having been fired from a firearm with six lands and grooves inclined to the right. A list of possible firearms would include, but not be limited to: Taurus, Heritage, Springfield, Heckler and Koch, Ruger, and Astra.
DBKGT8	Based on the agreement of class characteristics and sufficient agreement of individual characteristics, the questioned bullets marked "Item 3" and "Item 5" were fired from the same firearm as the three known bullets in the exhibit marked "Item 1". Based on the disagreement in

TABLE 2

WebCode	Conclusions
	individual characteristics, the questioned bullets marked "Item 2" and "Item 4" were fired from a different firearm as the three known bullets in the exhibit marked "Item 1".
DJGDLP	The items 3 and 5 bullets were identified as having been fired from the 40 caliber Ruger model P94DC pistol, based on microscopic comparison and the correspondence of the individual characteristics. The items 2 and 4 bullets were microscopically compared to the item 1, item 3, and item 5 bullets with inconclusive results however, differences in individual characteristics indicate a different firearm was used.
DJYB3H	The bullets of Items 3 and 5 has been fired through the barrel of the exhibit Ruger P94DC pistol, the bullets of Items 2 and 4, had been fired through the same barrel but not the barrel of the exhibit Ruger P94DC pistol.
DMHAFD	Item 1 through Item 5 are seven .40 caliber family copper jacketed bullets which have been fired from a barrel(s) with six grooves, right twist. The Item 1, Item 3 and Item 5 bullets were identified as having been fired from the same barrel. The Item 2 and Item 4 bullets 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 4 bullets were fired from the same barrel as the Item 1, Item 3 and Item 5 bullets. 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 4 bullets that includes pistols marketed by Astra, Heckler & Koch, Ruger and Taurus.
DMU4XY	The fired bullets submitted as items #3 and #5 were identified as having been fired from the same firearm that generated test set item #1. The fired bullets submitted as items #2 and #4 were eliminated as having been fired from the same firearm that generated test set item #1. Fired bullets #2 and #4 match each other and represent a second different firearm than what was submitted as item #1
DMXPRT	Items 3 and 5 were fired in the same firearm as Item 1 (identification). This conclusion was verified by Firearms Examiner [Name]. Items 2 and 4 were fired in the same firearm (identification). This conclusion was verified by Firearms Examiner [Name]. Items 2 and 4 could not be identified or eliminated as having been fired in the same firearm as Items 1, 3, and 5 (inconclusive). This conclusion was verified by Firearms Examiner [Name].
DVUHWR	The bullets in Exhibits #2 and #4 were fired from the same firearm. The bullets in Exhibits #2 and #4 were not fired from the firearm that fired the test shots in Exhibit #1. Exhibits #2 and #4 are 40/10 mm caliber bullets exhibiting six lands and grooves with a right hand twist. The bullets in Exhibits #3 and #5 were fired from the firearm that fired the test shots in Exhibit #1.
DYRZ48	Considering the comparison of their characteristics, the recovered bullets from Item 3 and Item 5 were fired in the recovered firearm (Item 1). The bullets from Item 3 and Item 5 present same characteristics than the bullets fired using the recovered firearm (Item 1). Otherwise the recovered bullets from Item 2 and Item 4 were fired by a same firearm which is different from Item 1.
DZLLVC	The Item 1-5 bullets were examined and microscopically compared to each other with the following results: Items 3 and 5 were identified as having been fired from the same firearm as the Item 1 test fired bullets. Items 2 and 4 were eliminated as having been fired from the same firearm as the Item 1 test fired bullets based on differences in individual characteristics. Items 2 and 4 were identified as having been fired from a second unknown .40 caliber firearm. The Items 2 and 4 bullets are most consistent with bullets commonly loaded in 40 S&W and 10 mm Auto caliber cartridges. Some possible firearms that exhibit the same class characteristics include, but are not limited to, those marketed by: FN/Browning, Heckler & Koch, Ruger,

TABLE 2

WebCode	Conclusions
	Springfield and Taurus. However, any suspect firearm should be submitted for comparison.
E2V3JA	The evidence in items 1-5 was analyzed by physical and microscopic examination. The four (4) bullets in items 2, 3, 4, and 5 were 40 caliber bullets which had been fired from the barrel of weapons rifled with six (6) lands and grooves, right twist. The two (2) bullets in items 2 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 4 were fired from one weapon and further analysis is pending submission of another weapon for additional comparison. The two (2) bullets in items 3 and 5 were determined to have been fired from the same weapon which fired the three (3) bullets in item 1.
E6CF84	Examinations under a comparison microscope LEICA FSC showed that the two bullets "item 3" and "item 5" were fired from the RUGER P94DC seized from the suspect and that the two bullets "item 2" and "item 4" were not fired in this weapon.
E83LQF	Bullets items 1, 3, and 5 were fired from the same firearm (.40 caliber pistol, Ruger P94DC). Bullets items 2 and 4 were fired from a second firearm. These bullets are consistent with .40/10 mm caliber, fired from a firearm rifled 6 R (right) typical of, but not limited to firearms manufactured/marketed by Astra, Fabrique Nationale, FN/Browning, Heckler & Koch, Heritage, KSN Industries, Republic Arms, Ruger, Springfield, and Taurus.
E8TYWE	Item #1 is a Ruger brand, caliber .40 S&W, semi-automatic pistol, model P94DC. Items #3 and #5 consist of two (2) caliber .40 S&W copper jacket bullets, which were identified as having been fired from the Item #1 pistol. Items #2 and #4 consist of two (2) caliber .40 S&W copper jacket bullets, which were identified as having been fired from the same barrel rifled with six (6) grooves, right twist. However, these Items were not fired from the Item #1 pistol. Firearms which produce impressions like those on Items #2 and #4, include but are not limited to caliber .40 S&W pistols marketed by Ruger.
ELYUEG	Item 1 test fires were fired from the same gun. Item 2 through items 5 were examined against item 1 to determine if they were fired by the same firearm. Item 3 and item 5 were fired in the same firearm as the test fires from item 1. Item 2 and item 4 were fired in the same firearm but not the same firearm as item 1.
EMAP6F	BULLET SPECIMENS Q2B AND Q4B (ITEM 3 AND ITEM 5) WERE FIRED WITH THE SAME FIREARM (FIREARM K1 RUGER P94DC, .40 S&W), THAT FIRED THE SUBMITTED TEST BULLETS RECEIVED AS ITEM 1. BULLET SPECIMENS Q1B AND Q3B (ITEM 2 AND ITEM 4) WERE FIRED WITH THE SAME UNKNOWN FIREARM; HOWEVER, THEY WERE NOT FIRED WITH THE SAME FIREARM (RUGER FIREARM K1), THAT FIRED THE SUBMITTED TEST BULLETS RECEIVED AS ITEM 1, DUE TO DIFFERENCES IN THE INDIVIDUAL MICROSCOPIC MARKINGS.
FEFR3D	The bullets listed as Items 3 & 5 have been identified as having been fired from the barrel of the same firearm as the three (3) test fired bullets listed as Item 1. The bullets listed as Items 2 & 4 were NOT fired from the barrel of the same firearm as Item 1. The bullets listed as Items 2&4 have been been[sic] identified as having been fired from the barrel of the same firearm.
FFTLPD	Examinations showed that the Item 3 and Item 5 bullets were discharged from the same firearm that discharged the Item 1 bullets. Examinations showed that the Item 2 and Item 4 bullets were discharged from the same unknown firearm. Examinations showed that the Item 2 and Item 4 bullets were not discharged from the same firearm that discharged the Item 1, Item 3 and Item 5 bullets.
FJ9WVG	Bullet Evidence: Items 1 (A, B, C), 3, and 5 were all fired in/from the same firearm. Items 2 and 4 were fired in/from a second firearm. These items are consistent with being 10mm/.40

TABLE 2

WebCode	Conclusions
	caliber fired bullets with six lands/grooves and right hand rifling. Possible makes of firearm manufacturers which may have fired these items includes but is not limited to: H&K, KSN Industries, Taurus, FN/Browning, Heritage, Springfield, Republic Arms, Ruger, Astra, Fabrique Nationale.
FNK2CW	Submissions #1-3 and #1-5 underwent direct microscopic comparison to test fire submission #1-1B. Submissions #1-3 and #1-5 were positively identified as having been fired from the same firearm as submission #1-1B test fire based on agreement of individual characteristics on the land impressions. Submission #1-2 underwent direct microscopic comparison to submission #1-4. Both were positively identified as having been fired from the same firearm based on agreement of individual characteristics found on the land impressions. Submissions #1-2 and #1-4 underwent direct microscopic comparison to test fire submission #1-1B. Submissions #1-2 and #1-4 were not fired from the same firearm as submission #1-1B based on a disagreement of individual characteristics found on the land impressions.
FQB8U8	Using a comparison microscope I examined Item 1 and compared them with the bullets of Items 2, 3, 4 & 5. Exhibit Items 3 & 5 were positively identified as being a match to Test Item 1 and in my opinion Items 3 & 5 were discharged[sic] in the same firearm as that which produced Item 1. Items 2 & 4 were eliminated as being a match to Item 1. They had matching discernable class characteristics but significant differences in individual characteristics. In my opinion Items 2 & 4 were not discharged in the same firearm as that which produced Item 1. Items 2 & 4 were compared with each other and were identified as being a match. Items 2 & 4 were discharged in the same unknown[sic] firearm which still remains outstanding.
FYZY49	I microscopically compared Items 1, A, 1B, and 1C (test fired bullets) to each other. I identified Items 1A, 1B and 1C as having been fired in the same firearm based on sufficient agreement of individual characteristics within the land impressions. I microscopically compared Items 1A, 1B, and 1C to Items 2 and 4. Based on sufficient disagreement of individual characteristics Items 2 and 4 were eliminated as having been fired in the same firearm as Items 1A, 1B, and 1C. I microscopically compared Item 1A to Items 3 and 5. I identified Items 3 and 5 as having been fired in the same firearm that fired Items 1A, 1B, and 1C based on sufficient agreement of individual characteristics within the land impressions. I microscopically compared Item 2 to Item 4. I identified Items 2 and 4 as having been fired in a second firearm based on sufficient agreement of individual characteristics within the land impressions. Items 2 and 4 are 40 caliber bullets containing 6 lands and grooves with a right twist. The list of manufacturers of firearms that may have fired Items 2 and 4 include Astra, Beretta, Fabrique Nationale, Browning, Heckler & Koch, Heritage, KSN Industries, Republic Arms, Ruger, Springfield, and Taurus. Sufficient agreement means the quantity and quality of the agreement of toolmarks produced by the firearm exceed the agreement of toolmarks produced by different firearms, such that the likelihood another firearm could have produced these marks is so remote as to be considered practically impossible.
G4RKMT	I compared the evidence bullets, Items 2 through 5, to bullets test fired in the Ruger brand pistol, Item 1. During the comparison with Items 3 and 5, I observed agreement of class characteristics and sufficient agreement of individualistic markings to conclude that these two bullets were fired in the Ruger pistol, Item 1. During the comparison with Items 2 and 4, I observed agreement of class characteristics, but no agreement of individualistic markings. Based on these observations I conclude that Items 2 and 4 were not fired in the Ruger pistol, Item 1.
G94BY3	After microscopic examination and comparison, I found that: i) there are sufficient characteristic marks on the test fired bullet Item 1, Item 3 and Item 5 for a positive correlation. ii) Item 2 and Item 4 were fired from different firearm.

TABLE 2

WebCode	Conclusions
GJM2EC	Item 1 - The bullets were compared to the Items 2, 3, 4 and 5 bullets. Items 2 and 4 - The bullets have weight of 180.4 and 180.5 grains respectively and a classification of six lands and grooves with a right hand twist. The bullets matched each other and were discharged from the same firearm. The bullets were also compared to the Items 1, 3 and 5 bullets. The bullets were eliminated as having been discharged from the Item 1 suspect's firearm. Items 3 and 5 - The bullets have weights of 180.8 and 180.4 grains respectively and a classification of six lands and grooves with a right hand twist. The bullets matched the test bullets of and were discharged from the above Item 1 suspect's pistol. The bullets were also compared to the Items 2 and 4 bullets. The bullets were eliminated as having been discharged from the same firearm that discharged the Item 2 and 4 bullets.
GR2R7K	The submitted test fired bullets (Items 1-1, 1-2, and 1-3) and fired bullets (Items 3 and 5) were determined to have been fired from the same firearm. The submitted fired bullets (Items 2 and 4) were determined to have been fired from the same firearm. Due to insufficient corresponding individual and matching class characteristics the submitted fired bullets (Items 2 and 4) were neither identified nor eliminated as having been fired from the same firearm as item 1.
GTVA8	The fired bullets, Items 2, 3, 4 and 5, share physical and class characteristics with the 40/10mm caliber class. They share similar rifling characteristics, with those of the test fired bullets, Item 1 (1a, 1b and 1c), of six land and groove impressions with a right twist. All of the bullets exhibit individual characteristics of comparative value. The fired bullets, Items 2 and 4 were microscopically examined and compared with the test fired bullets, Item 1. There is observed agreement of their class characteristics. However, there is insufficient agreement or disagreement of their individual characteristics to either identify or eliminate them as having been fired from the same firearm as the bullets from Item 1. The fired bullets, Items 2 and 4, were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items 2 and 4 are identified as having been fired from the same firearm. The fired bullets, Items 3 and 5, were 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, Items 3 and 5 are identified as having been fired from the same firearm as the test fired bullets, Item 1. There are numerous makes and models of firearms with rifling characteristics similar to those of Items 2, 3, 4 and 5. Any firearm that becomes suspect in this investigation should be submitted for laboratory examination.
GWTW2A	Microscopic comparison was conducted with the following results: Bullets, B-2 and B-4 were fired from pistol P-1. Bullets, B-1 and B-3 were fired from the same firearm. However not pistol P-1 due to difference in individual characteristics.
H2GWMT	The Exhibit #3 and #5 bullets were fired from the same firearm as the Exhibit #1 bullets. The Exhibit #2 and #4 bullets were fired from the same firearm. They are 40/10mm caliber class bullets. There are numerous manufacturers of firearms with similar rifling characteristics. They were not fired from the same firearm as the Exhibit #1, #3 and #5 bullets.
H2LGBW	[No conclusions reported.]
H677YF	The .40 caliber bullets in Items 1, 2, 3, 4 and 5 were microscopically examined in conjunction with one another. Based on these comparative examinations the following was determined: A. The bullets in Items 1, 3 and 5 had been fired through the barrel of the same firearm. B. The bullets in Items 2 and 4 had been fired through the barrel of the same unknown firearm. These two bullets bear the same class characteristics as the bullets in Items 1, 3 and 5. However, no similar individual characteristics were found to link these bullets as having been fired through the barrel of the same firearm as Items 1, 3 and 5.

TABLE 2

WebCode	Conclusions
HGAJU9	Bullet No.3 (first bullet recovered from the ceiling at the scene) and bullet No. 5 (bullet recovered from the wall at the scene), were shot by the same pistol as a three known bullets fired using the recovered firearm (Ruger P94DC cal. .40"). Bullet No. 2 (recovered from victim) and No. 4 (second bullet recovered from the ceiling at the scene), were fired using the same pistol, another then known firearm recovered in residence of suspected person.
HGU8K4	The fired bullets in Item #3 and Item #5 were fired in/from the same firearm as the fired bullets in Item #1. The fired bullets in Item #2 and Item #4 are eliminated as having been fired in the same firearm as the bullets in Item #1. The bullets in Item #2 and Item #4 were fired in/from the same firearm, but a different firearm than the one used for Item #1.
HLP6QL	The exhibits marked 168522/15(2) and (4) are positive to each other but negative to the test marked T1-T3. The exhibits marked 168522/15(3) and (5) are positive to each other and positive to test marked T1 and T3.
HTQF47	A microscopic examination and comparison of submitted expended bullets marked Item #3 and Item #5 to test expended bullets fired from a 40 S&W caliber Ruger pistol, model P94DC, marked Item #1, displayed a sufficient agreement of individual characteristics to conclude that they both had been fired in the submitted Ruger pistol. A microscopic examination and comparison of submitted expended bullets marked Item #2 and Item #4 revealed a sufficient agreement of individual characteristics to conclude that they both had been fired from one other unknown gun.
HVFLH	The three submitted fired bullets (Item 1-01-AA) were identified as having been fired from the same firearm (reportedly test fired from a Ruger pistol; the pistol was not submitted) due to consistent and reproducible marks. The three submitted fired bullets reportedly test fired from a Ruger pistol (Item 1-01-AA) were identified as having been fired from the same firearm as two of the other submitted fired bullets (Items 1-03-AA and 1-05-AA) due to consistent and reproducible marks. Unable to identify or eliminate the three submitted fired bullets reportedly test fired from a Ruger pistol (Item 1-01-AA) as having been fired from the same firearm as two of the other submitted fired bullets (Items 1-02-AA and 1-04-AA) due to an agreement of class characteristics but a lack of consistent and reproducible marks. Two of the submitted fired bullets (Items 1-02-AA and 1-04-AA) were identified as having been fired from the same firearm due to consistent and reproducible marks.
HZAFL4	The below listed spent bullets were microscopically examined and compared with test bullets fired from the Ruger Model P94DC 40S&W pistol, PR# [participant code]/HZAFL4, Lab Evidence # 001-A1. Numerous corresponding individual characteristics were observed. Therefore, it is my opinion that the below listed spent bullets were fired from this firearm. Lab Evidence #: 001-A3, Property #: [participant code]/HZAFL4, Item #: 3, Item Description: Spent 40 caliber bullet. Lab Evidence #: 001-A5, Property #: [participant code]/HZAFL4, Item #: 5, Item Description: Spent 40 caliber bullet. The below listed spent bullets were microscopically examined and compared with each other. Numerous corresponding individual characteristics were observed. Therefore, it is my opinion that the below listed spent bullets were fired from the same firearm. This firearm has a barrel with 6 lands and grooves with a right twist. Further, these 2 spent bullets were microscopically compared with test bullets fired from the Ruger Model P94DC 40S&W pistol, PR# [participant code]/HZAFL4, Lab Evidence # 001-A1. It is my opinion that these 2 spent bullets were not fired from this firearm. Lab Evidence #: 001-A2, Property #: [participant code]/HZAFL4, Item #:2, Item Description: Spent 40 caliber bullet. Lab Evidence #: 001-A4, Property #: [participant code]/HZAFL4, Item #: 4, Item Description: Spent 40 caliber bullet.
J3CYRN	[No conclusions reported.]

TABLE 2

WebCode	Conclusions
J7BDCT	Two of the four fired bullets (items 3 and 5) were fired from the same firearm that fired the known bullets (item 1). The remaining two fired bullets (items 2 and 4) were fired from a second firearm (not the firearm that fired item 1). The conclusion that sufficient agreement for identification exists means that the likelihood another firearm could have fired the submitted bullets is so remote as to be considered a practical impossibility.
J83BUM	Items 3 and 5 were fired in the same firearm as Item 1. Items 2 and 4 were fired in the same firearm. Items 2 and 4 could not be identified or eliminated as having been fired in the same firearm as Items 1, 3, and 5.
J8NTVM	The bullets marked 1;3 and 5 were fired from the recovered firearm (known). The bullets marked 2 and 4 were fired from the unknown firearm.
J9ZKWP	Laboratory Item 001.B (item 2) spent .40 caliber bullet is eliminated as being fired from Laboratory Item 001.A (item 1) Ruger model P94DC .40 caliber handgun. The items are eliminated as to sharing a common source, because there is significant disagreement of discernible class characteristics and(or) individual characteristics. Items 001.B (item 2) and 001.D (item 4) bullets were identified as being fired by the same firearm. Laboratory Item 001.C (item 3) spent .40 caliber bullet is identified as being fired by Laboratory Item 001.A (item 1) Ruger model P94DC .40 caliber handgun. The items are identified as to sharing a common source because there is agreement of all discernible class characteristics and sufficient agreement of a combination of individual characteristics where the extent of agreement exceeds that which can occur in the comparison of toolmarks made by different tools and is consistent with the agreement demonstrated by toolmarks known to have been produced by the same tool. Laboratory Item 001.D (item 4) spent .40 caliber bullet is eliminated as being fired from Laboratory Item 001.A (item 1) Ruger model P94DC .40 caliber handgun. The items are eliminated as to sharing a common source, because there is significant disagreement of discernible class characteristics and(or) individual characteristics. Items 001.B (item 2) and 001.D (item 4) bullets were identified as being fired by the same firearm. Laboratory Item 001.E (item 5) spent .40 caliber bullet is identified as being fired by Laboratory Item 001.A (item 1) Ruger model P94DC .40 caliber handgun. The items are identified as to sharing a common source because there is agreement of all discernible class characteristics and sufficient agreement of a combination of individual characteristics where the extent of agreement exceeds that which can occur in the comparison of toolmarks made by different tools and is consistent with the agreement demonstrated by toolmarks known to have been produced by the same tool.
JEFFD7	The Item 3 and Item 5 bullets were fired from the submitted Item 1 firearm. The Item 2 and Item 4 bullets were fired from the same firearm as each other; however, they were not fired from the submitted Item 1 firearm.
JGBRJ8	Item 1 through Item 5 consist of seven .40 caliber/10mm bullets that were fired from a rifled barrel with six grooves, right twist. The Item 3 and Item 5 bullets were identified as having been fired from the same barrel as the Item 1 bullets. The Item 2 and Item 4 bullets 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 4 bullets were fired from the same barrel as the Item 1, Item 3 and Item 5 bullets. 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 4 bullets that includes pistols marketed by Heckler & Koch, Ruger, and Taurus.
JJUV94	[No conclusions reported.]

TABLE 2

WebCode	Conclusions
JMEXYA	A MICROSCOPIC COMPARISON EXAMINATION OF TEST FIRED BULLETS FIRED WITH ITEM 1 RUGER PISTOL (K1) AGAINST EVIDENCE BULLETS ITEM 2 THROUGH ITEM 5 (Q2B THROUGH Q4B) HAS REVEALED THAT ITEM 3(Q2B) AND ITEM 5 (Q4B) WERE FIRED WITH ITEM 1 RUGER PISTOL (K1). ITEM 2 (Q1B) AND ITEM 4(Q3B) WERE BOTH FIRED WITH THE SAME UNKNOWN FIREARM. THEY BEAR SIMILAR RIFLING CLASS CHARACTERISTICS TO ITEM 1 (K1) AND ITEMS 3 AND 5 (Q2B AND Q4B) BUT DUE TO INSUFFICIENT AGREEMENT OF MARKINGS THEY COULD NOT BE POSITIVELY IDENTIFIED OR ELIMINATED TO ITEM 1 (K1), ITEM 3 (Q2B), OR ITEM 5(Q4B).
JNDWHH	Examination of Item 1 revealed three (3) 40 caliber full metal jacket bullets, fired through a firearm barrel rifled with six (6) lands and grooves with a right hand twist. Examination of Items 2 through 5 revealed four (4) 40 caliber full metal jacket bullets, fired through a firearm barrel rifled with six (6) lands and grooves with a right hand twist. Further examination of Items 3 & 5 to provided test fired bullets (Item 1) identified Items 3 & 5 as having been fired through the same firearm barrel as Item 1. Further examination of Items 2 & 4 to provided test fired bullets (Item 1) eliminated Items 2 & 4 as having been fired through the same firearm barrel as Item 1. Items 2 & 4 were compared to each other and were identified as having been fired through the same firearm barrel.
JNTDDB	The items 3 and 5 fired bullets were fired in/through the barrel of the same firearm as the item 1 test fired bullets (Ruger P94DC). The items 2 and 4 fired bullets were fired in/through the barrel of a 2nd firearm. Items 2 and 4 are consistent with 40 S&W/10mm Auto caliber fired bullets with 6 right rifling. The list of firearms that may have fired items 2 and 4 includes, but is not limited to: 40 S&W caliber - Taurus, FN/Browning, Springfield Inc, Heckler & Koch, Ruger, Astra, Republic Arms, Heritage and KSN Industries. 10 mm Auto caliber - Heckler & Koch
JP9HAN	Items 3 and 5 were identified 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 4 were 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 4 were identified as having been fired from the same unknown firearm based on agreement of the combination of individual characteristics and all discernible class characteristics.
K2AFN9	The results of the firearms examinations are included in this report. Item 2 through Item 5 are .40 caliber (10mm) copper full metal jacket bullets that were fired from a barrel rifled with six grooves, right twist. The Item 3 and Item 5 bullets were identified as having been fired from the barrel of the Item 1 pistol. The Item 2 and Item 4 bullets were identified as having been fired from the same barrel. However, due to lack of sufficient agreement in the individual microscopic marks of value, it could not be determined if the Item 2 and Item 4 bullets were 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 4 bullets that includes pistols marketed by Heckler & Koch, Ruger, Springfield, and Taurus.
K38Y7E	Item 1 consists of three fired 40 caliber bullets stated to have been test fired by a Ruger brand model P94DC pistol. Items 2, 3, 4, and 5 consist of four fired 40 caliber bullets. They were microscopically compared to Item 1 and each other. Items 3 and 5 were identified as having been fired by the same firearm that fired Item 1. Items 2 and 4 were identified as having been fired by the same firearm. Items 2 and 4 were eliminated as having been fired by the same firearm that fired Items 1, 3, and 5.
K6RPLC	1) PISTOL RUGER P94DC .40 SERIAL NUMBER ?????? FIRED BULLETS THAT INSCRIBED

TABLE 2

WebCode	Conclusions
	ITEM #3 AND ITEM #5. 2) PISTOL RUGER P94DC .40 SERIAL NUMBER ?????? DID NOT FIRED BULLETS THAT INSCRIBED ITEM #2 AND ITEM #4.
KBFE2F	In summary, the submitted Ruger pistol fired Items #1-3 and 1-5. Items #1-2 & 1-4 were fired from the same, unknown firearm, but not the submitted Ruger pistol. The test-fired bullets were microscopically compared to the questioned bullets (Items #1-2 thru 1-5) . Sufficient agreement was observed in the land impressions to conclude that Item #1-3 and 1-5 were fired in the same gun as the test-fires, Items 1-1 A thru C. Based on differences in the striae on the land impressions Item #1-2 and 1-4 can be excluded as being fired in the same gun as the test-fires (Items #1A-C). Item #1-2 was microscopically compared to Items 1-3 through 1-5. Sufficient agreement was observed between individual characteristics in the land impressions to conclude that Items #1-2 and 1-4 were fired in the same, unknown gun. Items #1-3 and 1-5 can be excluded as being fired from the same unknown gun as Items #1-2 and 1-4. The comparisons were documented with photographs and notes.
KRLQJ8	Yes means that the bullet was fired from the pistol Ruger P94DC cal. .40 held in evidence, whereas No means that the bullet was fired from a pistol other than the Ruger P94DC cal. .40 held in evidence. Both statements (decisions) are not subject to further commentaries. Inconclusive means that based upon preserved class and individual identification characteristics it is impossible to undoubtedly determine what gun was the examined bullet, held in evidence, fired from. Possible answers include probably yes, probably not or don't know.
KU9HHG	1. Microscopic examination of Exhibits 1, 3, and 5 (Bullets) revealed that all five bullets were fired from the same firearm. 2. Microscopic examination of Exhibits 2 and 4 (Bullets) revealed that both bullets were fired from the same firearm, however not the same firearm that fired Exhibits 1, 3, and 5.
KYZPY6	Item 1 test fired bullets from a Ruger P94DC .40" S&W calibre pistol were matched to Item 3. Therefore Item 3 was fired in this gun. Item 2 and 4 were matched together so were fired in a separate gun. Item 5 did not match any other item. It appears that three different guns were used to fire the submitted items.
L9M2W3	Microscopic comparison was conducted with the following results: Items #3 & #5 (bullets) were fired from the same firearm as Item #1 (test shots). Items #2 & #4 (bullets) were fired from the same firearm (not submitted).
L9RHU2	Examination of Items 2, 3, 4 and 5 revealed them to be .40/10mm caliber class full metal jacketed bullets each fired from a firearm with conventional style rifling consisting of six lands and grooves, right twist. Based on the agreement of caliber and all discernible class characteristics, the four bullets were microscopically compared to the Item 1 test exemplars fired from the recovered Ruger 40 S&W caliber pistol. Items 3 and 5 were identified based on the agreement of individual characteristics as having been fired from the Ruger pistol that fired the Item 1 exemplars. Items 2 and 4 were microscopically compared to each other and were identified based on the agreement of individual characteristics as having been fired from the barrel of one firearm. However, Items 2 and 4 are inconclusive to Items 1, 3 and 5 based on insufficient disagreement of individual characteristics. In the event that additional suspect firearms are recovered during the course of this investigation, they should be submitted for comparison purposes.
LA4WRV	Items 3 and 5 were identified as having been fired from the same firearm as Item 1. Items 2 and 4 were identified as having been fired from the same firearm; however, they were eliminated as having been fired from the same firearm as Item 1 due to differences in individual characteristics. Items 2 and 4 are 40/10mm caliber bullets and were fired from a firearm having six lands and grooves with a right hand twist. GRC provided.

TABLE 2

WebCode	Conclusions
LEF3Z3	The Item 1 through 5 bullets were microscopically compared to each other with the following results: Items 1, 3 and 5 were identified as having been fired in the same firearm. Items 2 and 4 were identified as having been fired in the same unknown firearm. Items 2 and 4 were eliminated as having been fired in the same firearm as the Item 1 tests due to individual characteristic differences.
LEW2BE	Items 1 (1), 1 (2), and 1 (3) are known test fired bullets from the Ruger 40 caliber pistol, model P94DC. Items 2, 3, 4, and 5 are consistent with 40 caliber bullets having six land and groove impressions with conventional style rifling and a right twist. Items 2, 3, 4, and 5 were microscopically compared to the known test fires, items 1 (1), 1 (2), and 1 (3). There are sufficient individual characteristics present to identify items 3 and 5 as having been fired in the same firearm as the known test fires, items 1 (1), 1 (2), and 1 (3). Based on significant disagreement of discernible individual characteristics, items 2 and 4 can be eliminated from being fired in the same firearm as the known test fires, items 1 (1), 1 (2), and 1 (3) and items 3 and 5. There are sufficient individual characteristics present to identify items 2 and 4 as having been fired in the same unknown firearm. Common firearm manufacturers that may have fired items 2 and 4 include Beretta, Bersa, CZ, Fabrique Nationale, Browning, Heckler & Koch, Hi-Point, Ruger, Springfield, and Taurus.
LNZDGU	Bullet Analysis: Items 2, 3, 4 and 5 are 40 caliber bullets based upon the diameter. Opinion/Interpretation: Items 2, 3, 4 and 5 are consistent with bullets loaded in .40 S&W and 10mm Auto caliber cartridges based upon the weight and style. Items 2 and 4, the bullets exhibit characteristics found in (but not limited to) the following firearms: Astra, Beretta, Heckler & Koch, Ruger, Springfield Inc and Taurus .40 S&W caliber firearms; Heckler & Koch 10mm Auto caliber firearms. *Note: The firearms listed are those most commonly encountered in casework. Methodology - Comparison Microscopy. Items 3 and 5, the bullets, were fired through the barrel of the same firearm as Item 1, the bullets identified to be test fired from the suspect's firearm, based upon corresponding class and individual microscopic characteristics. Items 2 and 4, the bullets, were not fired through the barrel of the same firearm as Item 1, the bullets identified to be test fired from the suspects firearm, based upon different individual microscopic characteristics.
LTV6PQ	Projectiles B (Item 3) and D (Item 5) were fired in the submitted .40 S&W Ruger P94DC pistol (Item 1). Projectiles A (Item 2) and C (Item 4) were fired in a second .40 S&W firearm. Suspect weapons include the below most frequently encountered .40 S&W pistols: Beretta, Heckler & Koch, Ruger, Springfield Armory, Taurus. However, any suspect weapon should be submitted to the laboratory for analysis.
LU7TCY	The items 1, 3 and 5 bullets were identified as having been fired from the same firearm. The items 2 and 4 bullets were identified as having been fired from the same firearm. However, the bullets were fired from a different firearm than items 1, 3 and 5 were fired. The items 1 through 5 bullets were determined to be of 40 caliber displaying rifling characteristics of 6 lands and grooves, right hand twist.
LWBFQN	Questioned Bullets, Item 3 and Item 5 were fired in the same firearm as the known bullets, Item 1.
M4BKUR	The recovered bullets (Item 3 and Item 5) were fired from the recovered firearm. The recovered bullets (Item 2 and Item 4) were not fired from the recovered firearm but were fired from the same firearm.
MGH29A	Items 1-5 were compared microscopically with each other. There is agreement of all discernable class characteristics. Items 1, 3 & 5 have sufficient agreement of individual

TABLE 2

WebCode	Conclusions
	characteristics for identification. They were fired from the firearm. Items 2 & 4 have sufficient agreement of individual characteristics for identification. They were fired from the same firearm. Based on differing individual characteristics it is a different firearm that Item 1 tests.
MM2PDP	Projectiles B (Item 3) and D (Item 5) were fired in the suspect Ruger P94DC pistol (Item 1). Projectiles A (Item 2) and C (Item 4) were fired in one .40 caliber firearm. Projectiles A and C could have been fired in the suspect Ruger pistol based on class characteristics; however, there are insufficient individual characteristics to suggest that they were.
MYENFY	Item 3 and item 5 are fired from the same firearm than the items 1. Item 2 and item 4 are fired from the same firearm, but different than item 1.
MZUXKT	Items 3 and 5 bullets were fired from the same firearm that fired the Item 1 bullets. Items 2 and 4 bullets were not fired from the same firearm that fired the Item 1 bullets. Items 2 and 4 bullets were fired in the same firearm and are consistent with bullets commonly found loaded in 40 S&W and 10mm Auto caliber ammunition. 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.
N2KDCG	3. On 2015-08-07 during the performance of my official duties I received a sealed evidence bag with number PA4001486492 from Case Administration of the Ballistics Section containing the following exhibits: 3.1: Three (3) .40 calibre fired bullets marked by me "173695/15" each and "1A" to "1C" individually. 3.2: One (1) .40 calibre fired bullet marked by me "173695/15 2". 3.3: One (1) .40 calibre fired bullet marked by me "173695/15 3". 3.4: One .40 (1) calibre fired bullet marked by me "173695/15 4". 3.5: One (1) .40 calibre fired bullet marked by me "173695/15 5". 4. The intention and scope of this forensic examination comprises of the following: 4.1: The examination and identification of fired bullets. 4.2: Microscopic individualization of fired bullets. 5. I examined the fired bullets mentioned in paragraphs 3.1 to 3.5 and compared the individual and class characteristics markings on them using a comparison microscope and found: 5.1: The bullets mentioned in paragraphs 3.1, 3.3 and 3.5 were fired from the first (1st) firearm. 5.2: The bullets mentioned in paragraphs 3.2 and 3.4 were fired from the second (2nd) firearm.
N3GUND	In my opinion a microscopical comparison has shown that there is sufficient agreement of class and individual characteristic markings to conclusively determine that Item 3 and Item 5 were discharged in the received firearm (Item 1). There was agreement of class characteristics markings but sufficient disagreement of individual markings to conclusively determine that items 2 and 4 were not fired from the recovered firearm Item 1. There is sufficient agreement of class and individual characteristic markings to conclusively determine that Items 2 & 4 were discharged from the same gun.
N3GWDH	The fired bullets marked Item 1; Item 3 and Item 5 were fired in the same firearm. The fired bullets marked Item 2 and Item 4 were fired in the second firearm.
N8MP8D	Item 3 and item 5 bullets were fired from the same firearm as the item 1 bullets. Item 2 and item 4 bullets were fired from the same firearm that was different from the firearm used to fire item 1 bullets.
N9FFDR	Items 2-5 each consisted of one fired bullet in .40" calibre. Microscopic examination on the fired bullets in Items 1-5 showed that Items 3 and 5 were fired from the same firearm that had fired Item 1.
NABYFT	The markings transferred to the test fired bullets, Item 1 during the firing process were compared to the markings on the questioned bullets, Items 2, 3, 4 and 5 using a comparison microscope. There was agreement of all discernible class characteristic markings and sufficient

TABLE 2

WebCode	Conclusions
	agreement of a combination of individual characteristic markings to determine that the bullets, Items 3 and 5 had been discharged in the same firearm as the test fired bullets, Item 1. There was agreement of all discernible class characteristic markings but sufficient disagreement of individual characteristic markings to determine that the bullets, Items 2 and 4 had not been discharged in the same firearm as the test fired bullets, Item 1. There was however sufficient agreement of a combination of individual characteristic markings to determine that the bullets, Items 2 and 4 had been discharged in the same firearm.
NC2FET	The Items 3 and 5 fired in the weapon recovered (item 1). The Items 2 and 4 don't fired in the weapon recovered (item 1)
NHZYK6	All of the Item 1 from test fired match with Item 3 and Item 5 when compare them under comparison microscope. They're have the same lands and grooves mark. We can concluded that: ltime[sic] 1, Item 3 and Item 5 came from the same gun. Additional: Item 2 and Item 4 have the same lands and groove marks. We can concluded the Item 2 and Item 4 came from the same gun.
NKBRP6	Items #3 and #5 were identified as having been fired from the same known firearm barrel that generated item #1 test fires. Items #2 and #4 were eliminated as having been fired from the same known firearm barrel that generated item #1 test fires, but were fired from the same unknown firearm barrel.
NM6A2R	Bullet Analysis: Items 2, 3, 4 and 5 were 40 caliber class bullets based upon the diameter. Opinion/Interpretation: Items 2, 3 ,4 and 5 are consistent with bullets loaded in .40 S&W and 10mm Auto caliber cartridges based upon the weight and style. These bullets exhibit characteristics found in (but not limited to) the following firearms: Astra, Fabrique Nationale, FN/Browning, Heckler & Koch, Republic Arms, Ruger, Springfield, Inc. and Taurus .40 S&W caliber firearms and Heckler and Koch 10mm Auto caliber firearms. Methodology - Comparison Microscopy. Items 3 and 5, the bullets, were fired in the same firearm as Item 1, the bullets, based upon corresponding class and individual microscopic characteristics. Items 2 and 4, the bullets, were not fired in the same firearm as Items 1, 3 or 5, the bullets, based upon different individual microscopic characteristics. Items 2 and 4, the bullets, were fired in the same firearm based upon corresponding class and individual microscopic characteristics.
NRY6VZ	The fired bullets, items #3 and 5, were microscopically identified to the test fired bullets, items #1. Items 3 and 5 were fired in the test fired Ruger firearm. The fired bullets, items #2 and 4, were microscopically identified as having been fired in the same unknown firearm. These bullets were visually and microscopically examined and found to be .40 caliber bullets most commonly loaded into 40S&W cartridges. They were fired from a conventionally rifled barrel with six lands and grooves with a right hand twist. A search of the General Rifling Characteristics (GRC) database returned a list of manufacturers. This list included, Astra, FN, H&K, Ruger, Springfield and Taurus. This list of manufacturers should not be considered all-inclusive. Other manuacuaters not listed in the GRC database cannot be excluded. [sic]
NZ74AF	Comparison microscope examinations were conducted on the evidence listed above. The findings of this examiner are the following: a. Exhibit 3 and 5 are .40 caliber class fired projectiles normally loaded in .40 S&W caliber cartridge. b. Exhibit 3 and 5 were fired from the same firearm as the Exhibit 1 test fires. c. Exhibit 2 and 4 are .40 caliber class fired projectiles normally loaded in .40 S&W cartridge. d. Exhibit 2 and 4 were fired from the same firearm. However, Exhibit 2 and 4 were eliminated as being fired from the same firearm as the Exhibit 1 test fires, based on individual characteristics. The following is an investigative lead only and not intended to exclude all other makes of firearms. Based on class characteristics of Exhibit 2, the possible firearm is a: .40 S&W Astra, Ruger or Taurus pistol.

TABLE 2

WebCode	Conclusions
P2VYZ9	Bullets marked 196239/15 D3 & D5 and tests marked 239TB1A-239TB1C were fired in the same firearm. Bullets marked 196239/15 D2 & D4 were fired in a second firearm.
P3UZ7Z	Item #3 & Item #5 were fired from the same firearm as Item #1. Item #2 & Item #4 were fired from the same firearm, not Item #1
P79FU7	The item 1 (three bullets discharged from the suspect's weapon) and the four bullets (Items 2, 3, 4 and 5) were microscopically examined and compared. Based upon matching microscopic, two of the bullets (Items 3 and 5) were identified as having been fired in the suspect's firearm (Item 1). The remaining bullets (Items 2 and 4) were fired in a different firearm.
P9VDWF	[No conclusions reported.]
PCCLAA	Bullets marked 3 and 5 are positive to the tests bullets marked 1. Bullets marked 2 and 4 are positive to each other and negative to the tests.
PDQ3F9	Item 1 - Three (3) bullets test fired using a .40 caliber Ruger handgun, model P94DC. Item 2 - One (1) fired bullet. Item 3 - One (1) fired bullet. Item 4 - One (1) fired bullet. Item 5 - One (1) fired bullet. The submitted specimens marked Item 3 and Item 5 were examined and identified as two (2) fired .40 S&W caliber bullets exhibiting six (6) land and groove impressions with a right twist. The submitted specimens marked Item 2 and Item 4 were examined and identified as two (2) fired .40 S&W/10mm Auto caliber bullets exhibiting six (6) land and groove impressions with a right twist. Item 2 through Item 5 were microscopically inter-compared and also compared to test fired bullets, Item 1. As a result of microscopic examinations, Item 3 and Item 5 were identified as having been fired from the same firearm that fired Item 1. Item 2 and Item 4 were identified as having been fired from the same firearm but were eliminated as having been fired from the same firearm that fired Item 1 due to differences in individual characteristics. Firearms that may produce similar rifling impressions as those exhibited on Item 2 and Item 4 include, but are not limited to, .40 S&W caliber firearms marketed by Astra, Beretta, Fabrique Nationale, Heckler & Koch, Ruger, Springfield Inc., and Taurus; and 10mm Auto caliber firearms marketed by Heckler & Koch.
PE2TRK	Through the microscopic examination and comparison it was determined[sic] that: 1. The bullets described in Item 1, 3 and 5, are .40/10mm caliber, metal case type, with right rifling (R-6) and were fired by the same firearm (suspect's weapon). August/18/2015 2. The bullets described in the Item 2 and Item 4, are .40/10 mm caliber, metal case type, with right rifling (R-6) and were fired by the same firearm (unknown weapon). August/18/2015
PH4Q3D	In my opinion Items 3 + 5 had been discharged from the recovered gun (Item 1). In my opinion this was based upon significant matching firing detail seen within the land impressions. In my opinion Items 2 + 4 had not been discharged from the recovered gun (Item 1). In my opinion this was based upon insufficient agreement between the firing detail within the land impressions. In my opinion Items 2 + 4 had been discharged in the same gun. In my opinion two guns were used in the incident: The Ruger P94DC + another gun possibly of different name + model.
PKTZCE	3. On 2015-08-07 during the performance of my official duties I received a sealed evidence bag with number PA4001486490 from Case Administration of the Ballistics Section, containing the following: 3.1: One (1) sealed white cardboard box marked "2015 CTS Forensic Testing Program Test No. 15-527: Firearms Examination Sample Pack: F2" containing the following: 3.1.1: One (1) jewel box marked "Item 1" containing the following exhibits: 3.1.1.1: Three (3) .40 calibre fired bullets marked by me 722TB1, 722TB2 and 722TB3 respectively. 3.1.2: One (1) jewel box marked "Item 2" containing the following exhibit: 3.1.2.1 One (1) .40 calibre fired bullet marked by me "173722/15 B2". 3.1.3: One (1) jewel box marked "Item 3"

TABLE 2

WebCode	Conclusions
	<p>containing the following exhibit: 3.1.3.1: One (1) .40 calibre fired bullet marked by me "173722/15 B3". 3.1.4: One (1) jewel box marked "Item 4" containing the following exhibit: 3.1.4.1: One (1) .40 calibre fired bullet marked by me "173722/15 B4". 3.1.5: One (1) jewel box marked "Item 5" containing the following exhibit: 3.1.5.1: One (1) .40 calibre fired bullet marked by me "173722/15 B5". 4. The intention and scope of this forensic examination comprise of the following: 4.1: The examination and identification of fired bullets. 4.2: Microscopic individualization of fired bullets. 5. I examined the fired bullets mentioned in paragraphs 3.1.1.1, 3.1.2.1, 3.1.3.1, 3.1.4.1 and 3.1.5.1 and compared the individual and class characteristics markings transferred to them by firearm components during the firing process using a comparison microscope and found: 5.1: The bullets mentioned in paragraphs 3.1.3.1 and 3.1.5.1 were fired from the same firearm that discharged the bullets mentioned in paragraph 3.1.1.1. 5.2: The bullets mentioned in paragraphs 3.1.2.1 and 3.1.4.1 were fired from the same firearm but not from the firearm that discharged the bullets mentioned in paragraph 5.1.</p>
Q6UDJR	Items 1, 3 and 5 were fired from the same firearm.
Q768E6	Examinations showed that the discharged bullets in Item 3 and Item 5 were discharged from the same firearm used to discharge the test fired bullets in Item 1. Examinations showed that the discharged bullets in Item 2 and Item 4 were not discharged from the same firearm used to discharge the test fired bullets in Item 1. Examinations showed that the discharged bullets in Item 2 and Item 4 were discharged from the same unknown firearm.
Q7KQX4	Item #1 is a Ruger, caliber .40S&W semi-automatic pistol, model number P94DC, serial number none, which was found to be in normal operating condition. Items #3 and #5 are two caliber .40 S&W copper jacketed bullets, which were identified as having been fired from the Item #1 pistol. Items #2 and #4 are two (2) caliber .40S&W copper jacketed bullets, which were identified as having been fired from the same barrel, however Items #2 and #4 were not fired from the Item #1 pistol.
Q7N2Z2	Item 1 through Item 5 are seven .40 caliber family copper jacketed bullets which have been fired from a barrel(s) with six grooves[sic], right twist. The Item 1, Item 3 and Item 5 bullets were identified as having been fired from the same barrel. The Item 2 and Item 4 bullets 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 4 bullets were fired from the same barrel as the Item 1, Item 3 and Item 5 bullets. 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 4 bullets that includes pistols marketed by Astra, Heckler & Koch and Taurus.
QBXAB6	Items 3 and 5 were fired in the same firearm as Item 1 test fires from a 40 S&W Ruger P94DC. Items 2 and 4 were fired in a second firearm. Items 2 and 4 are consistent with being 40 nominal caliber projectiles (which includes but is not limited to 40 S&W and 10 mm Auto) fired by a firearm with 6 right rifling. Possible makes of firearms that may have fired Items 2 and 4 includes, but is not limited to, Astra, Beretta, Fabrique Nationale, Heckler & Koch, Heritage, KSN Industries, Republic Arms, Ruger, Springfield Inc. and Taurus.
QFRDXG	The bullets marked 2 and 4 were fired from the same (first) firearm. The bullets marked 3, 5 and test marked 1 were fired from the same (second) firearm.
QHYQTA	Items #1 through #5 were microscopically examined and determined to be suitable for comparison due to sufficient class and individual characteristics. Items #1, #3, and #5 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items #1, #3, and

TABLE 2

WebCode	Conclusions
	<p>#5 are identified as having been fired from the same firearm. Item #2 and Item #4 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items #2 and #4 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 fired from the same firearm.</p>
QLFY4H	<p>2.1: The bullets mentioned in 3.2 marked 196229/15 (3) and (5) were fired from the same firearm as tests bullets mentioned in 3.1. 2.2: The bullets mentioned in 3.2 marked 196229/15 (2) and (4) were fired from the second firearm</p>
QMAPAW	<p>Items # (3, 5) and Test Fires (1, 1, 1) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items # (3, 5) and Test Fires (1, 1, 1) are identified as having been discharged from the same firearm (Item 1). Item # (2) and Item # (4) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Item # (2) and Item # (4) are identified as having been discharged from the same firearm.</p>
QPMCUW	<p>The below listed spent bullets were microscopically examined and compared with test bullets fired from the Ruger 40 S&W pistol, PR# [participant code]/QPMCUW, Lab Evidence # 001-A1. Numerous corresponding individual characteristics were observed. Therefore, it is my opinion that the below listed items were fired from this firearm. Lab Evidence #: 001-A3, Property #: [participant code]/QPMCUW, Item #: 3, Item Description: Spent bullet (ceiling). Lab Evidence #: 001-A5, Property #: [participant code]/QPMCUW, Item #: 5, Item Description: Spent bullet (wall). The below listed spent bullets were microscopically examined and compared with each other. Numerous corresponding individual characteristics were observed. Therefore, it is my opinion that the below listed spent bullets were fired from the same firearm. These bullets were determined to have been fired from a weapon having a barrel with 6 lands and grooves with a right twist. The spent bullets were further microscopically examined and compared with test bullets fired from the Ruger 40 S&W pistol, PR# [participant code]/QPMCUW, Lab Evidence # 001-A1. It is my opinion that these bullets were not fired by this firearm. Lab Evidence #: 001-A2, Property #: [participant code]/QPMCUW, Item #: 2, Item Description: Spent bullet (victim). Lab Evidence #: 001-A4, Property #: [participant code]/QPMCUW, Item #: 4, Item Description: Spent bullet (ceiling).</p>
QR94WL	<p>The test rounds fired in the Ruger P94DC 40 S&W caliber pistol were compared the Items 2-5. The Items 2-5 are 40 S&W caliber copper jacketed bullets having six lands and groove impressions with a right twist. Microscopic comparisons of the test rounds and Items 2-5 determined that there are sufficient individual class characteristic present on items 3 and 5 to identify Items 3 and 5 as having been fired in the Item 1 pistol. The Item 2 and 4 bullets are eliminated as having been fired in the Item 1 pistol. Microscopic comparisons determined that Items 2 and 4 were fired in a second unknown firearm.</p>
QV7JAF	<p>The bullets marked 196227/15 1A to 1C, 2A, 3A, 4A & 5A were fired in the same firearm.</p>
QVQFGA	<p>Five of the bullets (1A - 1C, 3, 5) were fired from the same firearm. Five of the bullets (1A - 1C, 3, 5) are consistent with 40 caliber class and were fired from a firearm with six lands and grooves inclined to the right. Possible firearms from which five of the bullets (1A - 1C, 3, 5) may have been fired include, but are not limited to, 10mm Auto caliber submachine guns marketed by Heckler & Koch and 40 Smith & Wesson caliber pistols marketed by Astra, Fabrique Nationale, Heckler & Koch, Heritage, KSN Industries, Republic Arms, Ruger, Springfield Armory, and Taurus. Two of the bullets (2, 4) were fired from the same firearm. Two</p>

TABLE 2

WebCode	Conclusions
	of the bullets (2, 4) were not fired from the same firearm as were the other five bullets (1A - 1C, 3, 5). Two of the bullets (2, 4) are consistent with 40 caliber class and were fired from a firearm with six lands and grooves inclined to the right. Possible firearms from which five of the bullets (1A - 1C, 3, 5) may have been fired include, but are not limited to, 10mm Auto caliber submachine guns marketed by Heckler & Koch and 40 Smith & Wesson caliber pistols marketed by Astra, Beretta, Fabrique Nationale, Heckler & Koch, Heritage, KSN Industries, Republic Arms, Ruger, Springfield Armory, and Taurus.
QYM2DR	The fired bullets in Items 2, 3, 4 and 5 (questioned) were microscopically compared to Item 1 (known). It was determined that the bullets in Item 3 and 5 (questioned) were fired in the same firearm as the bullet in Item 1 (known).
R6R33E	The tests (Item 1) were compared and found positive with the Item 3 and Item 5, meaning that it was fired from the Ruger P94DC. Item 2 and 4, were fired in a second fire arm and were not fired from the firearm Ruger P94DC.
R7H9KQ	The characteristic marks on Item 3 and Item 5 were similar to Item 1. Hence, I am of the opinion that Item 3 and Item 5 were fired using Ruger P94DC .40 handgun that fired Item 1. The characteristic marks on Item 2 and Item 4 were dissimilar to Item 1.
R7LT9U	Deformed bullets (3, 5) and test fires (1.1-1.3) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, deformed bullets (3, 5) and test fires (1.1-1.3) are identified as having been fired from the SAME gun. Deformed bullets (2, 4) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, deformed bullets (2, 4) are identified as having been fired from ANOTHER gun.
R9PJQF	Items 3 and 5 were identified as having been fired from the firearm used to produce the Item 1 known bullets. Items 2 and 4 were not fired from the firearm used to produce the Item 1 known bullets. Items 2 and 4 were identified as having been fired from the same unknown firearm.
REFWK4	Items 1C and 1E were identified as having been fired from same firearm that fired item 1A based on the agreement of individual and class characteristics. Items 1B and 1D were eliminated as having been fired from same firearm that fired item 1A based on the disagreement of individual characteristics.
RLTWNT	Recovered questioned bullets - Items #3 and #5 were fired in the same firearm as the known bullets (Item #1). Recovered questioned bullets - Items #2 and #4 were fired in the same but other different firearm.
RM92L6	The bullets in Items 1 thru 5 were microscopically examined in conjunction with one another. Based on these comparative examinations and observed class and individual characteristics, it was determined that: A) The bullets in Item 1, Item 3, and Item 5 had all been fired through the barrel of the same firearm. B) The bullets in Item 2 and Item 4 had been fired through the barrel of the same firearm, but could not be linked to having been fired through the same firearm barrel as Items 1, 3, and 5. The 6-Right rifling characteristics present on Items 2 and 4 are common to a variety of 40 caliber firearms. Some of the more common brands include: Astra, Beretta, FN/Browning, H&K, Ruger, Springfield, Taurus, and others. Suspect firearms should be submitted for comparison.
T2L2H9	In my opinion, following a microscopical comparison of firing marks, there is sufficient agreement of class and individual characteristic markings to conclusively determine that items 1, 3 & 5 were fired in the same firearm. In my opinion, following a microscopical comparison of firing marks, there is agreement of class characteristic markings but significant disagreement

TABLE 2

WebCode	Conclusions
	of individual characteristic markings, therefore items 2 & 4 were fired in a different gun to items 1, 3 & 5. Furthermore, in my opinion, following a microscopical comparison of firing marks, there is sufficient agreement of class and individual characteristic markings to conclusively determine that items 2 & 4 were fired in the same firearm.
T3FRNM	FROM THE FIRING MARKS PRESENT, CONSISTING OF GENERAL RIFLING FORM AND FINE DETAIL WITHIN, WE ARE OF THE OPINION THAT BULLETS LABELLED 1,3 AND 5 HAD BEEN FIRED FROM THE SAME WEAPON. FROM THE FIRING MARKS PRESENT, CONSISTING OF GENERAL RIFLING FORM AND FINE DETAIL WITHIN, WE ARE OF THE OPINION THAT BULLETS LABELLED 2 AND 4 HAD BEEN FIRED FROM THE SAME WEAPON, BUT A DIFFERENT WEAPON FROM THE GUN MENTIONED ABOVE. IN CONCLUSION TWO WEAPONS HAVE BEEN UTILISED DURING THIS INCIDENT.
T3WZNN	Items 3 and 5 were identified as having been fired from the same firearm as Item 1. Items 2 and 4 were identified as having been fired from the same unknown firearm. Items 2 and 4 were not fired from the same firearm as Item 1. Items 2 and 4 are 40/10mm caliber bullets which were fired from a firearm having six lands and grooves with a right-hand twist, a land width of approximately 0.081 inches and a groove width of approximately 0.119 inches. A list of firearms having the characteristics of Items 2 and 4 is included with this report. It should be noted that this list does not necessarily contain all firearms having the observed characteristics.
T4RJB	The Item 3 and Item 5 bullets were identified as having been fired from the firearm that fired the Item 1 bullets. The Item 2 and Item 4 bullets were identified as having been fired in the same firearm. However could not be identified or eliminated as having been fired from the firearm that fired the Item 1 bullets based on a lack of corresponding individual characteristics. Manufactures of firearms with similar rifiling[sic] characteristics to those displayed by Item 2 and Item 4 include, but are not limited to Astra, Fabrique Nationale, Ruger and Taurus. ***This report contains the opinions and interpretations of the individual whose signature appears on the report. All identifications are based on microscopic comparisons and the correspondence of individual characteristics.
TBTVM8	The bullets were microscopically examined in conjunction with one another. Based on these comparative examinations, the following was determined: The two bullets in Items 3 & 5 were fired in the same firearm as the bullets in Item 1. The two bullets in Items 2 & 4 had been fired from a second, unrecovered firearm. Some of the more commonly encountered firearms manufactured with rifling characteristics similar to those present on Items 2 & 4 include, but are not necessarily limited to, Taurus, Heckler & Koch and Ruger .40 caliber pistols
TF4U4U	Items (3 , 5) and Test fires (1, 1, 1) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, items (3, 5) and Test fires (1, 1, 1) are identified as having been fired from the SAME firearm. Items (2 and 4) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, items (2 and 4) are identified as having been fired from ANOTHER firearm.
TF6M22	Items 3 and 5 were fired from the recovered firearm Ruger P94DC. Items 2 and 4 were fired from the same firearm but different from the recovered firearm Ruger P94DC.
THBADK	Items 3, 5, and the test fired bullets from Item 1 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 Item 1, the recovered Ruger pistol. Items 2 and 4 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. Item 2 and test fired bullets

TABLE 2

WebCode	Conclusions
	from Item 1 were microscopically examined. Agreement of class characteristics was observed. However, there is insufficient agreement or disagreement of individual characteristics to either identify or eliminate the bullets as having been fired from the same firearm.
TLC6C2	The bullets in Items 2, 3, 4, and 5 were microscopically examined in conjunction with Item 1 (known) bullets. Based on these comparative examinations it was determined that: A. The bullets in Items 3 and 5 had been fired through the barrel of the same firearm as Item 1 (known) bullets. B. The bullets in Items 2 and 4 bear the same class characteristics as Item 1 (known) bullets. However, no individual characteristics were found to link Items 2 and 4 as having been fired in the same firearm as Item 1. C. The bullets in Items 2 and 4 had been fired through the barrel of the same firearm.
TM7VFU	I made an examination of the three test fired bullets using a comparison microscope. This type of examination allows two objects to be viewed simultaneously so that microscopic marks left behind on the circumference of bullets during discharge can be compared and assessed. This was done to determine which marks on the test fired bullets replicates. I then performed a similar comparison between these test fired bullets and the question fired bullets, Item 2 to Item 5. As a result of this examination I formed the following opinion: Item 3 and Item 5 were discharged from the same firearm that discharged the bullets from Item 1. Item 2 and Item 4 were both discharged from the same firearm, not being the firearm Items 1, 3 and 5 were discharged from.
TYH2N3	Item 1 (known test fired standards) was microscopically compared to Items 2, 3, 4 and 5 (questioned bullets). Items 1, 3 and 5 were fired from the same firearm due to sufficient agreement of class and individual characteristics. Items 2 and 4 were fired from the same firearm due to sufficient agreement of class and individual characteristics. Items 2 and 4 were not fired from the same firearm as Items 1, 3 and 5 due to agreement of class characteristics but disagreement of individual characteristics.
TZPL6B	On 2015-08-07 during the performance of my official duties I received a sealed evidence bag with number PA4001486491 from Case Administration of the Ballistics Section, containing the following: 3.1: One (1) sealed white carton box labelled 2015 CTS Forensic Testing Program Test No.15-527 Firearms Examination Sample Pack: F2, containing the following exhibits and tests: 3.1.1: Three (3) .40 calibre test fired bullets marked "1" each and further marked by me with the following characters: "A", "B" and "C" respectively. 3.1.2: Four (4) .40 calibre fired bullets marked "2" to "5" respectively. 4. The intention and scope of this forensic examination comprises of the following: 4.1: The examination and identification of fired bullets. 4.2: Microscopic individualization of fired bullets. 5. I examined the fired bullets mentioned in paragraphs 3.1.1 and 3.1.2 and compared the individual and class characteristics markings transferred to them by firearm components during the firing process using a comparison microscope and found: 5.1: The bullets mentioned in paragraph 3.1.2 marked "3" and "5" respectively were fired from the same pistol that discharged the test bullets mentioned in paragraph 3.1.1. 5.2: The bullets mentioned in paragraph 3.1.2 marked "2" and "4" respectively were fired from a second (2nd) firearm.
U63L7A	Item 1 was compared to items 3 and 5. The items 1, 3 and 5 fired bullets were identified as having been fired from the same firearm. Item 1 was compared to items 2 and 4. Due to differences in individual characteristics, the Items 2 and 4 fired bullets were eliminated as having been fired from the same firearm as the Item 1 fired bullets.
U96KG2	I examined the above mentioned items and I am of the opinion that: Items 3 and 5 were fired in the same firearm that fired the test-fired bullets item 1; Items 2 and 4 were fired in a second firearm; Items 2 & 4 are 40 Caliber Class fired bullets; they were fired from a 40 Caliber Class

TABLE 2

WebCode	Conclusions
	firearm rifled with six lands and grooves, right hand twist; the physical characteristics of these items are consistent with the bullets fired from firearms typical of, but not limited to, 40 S&W caliber Astra, Fabrique Nationale, Heckler & Koch, Republic Arms, Ruger, Springfield Inc. and Taurus semi-automatic pistols.
ULQWZB	1. Exhibits 2, 3, 4, 5 (four .40 caliber bullets) were visually examined and microscopically compared to Exhibit 1 (three test-fired bullets, from a Ruger P94DC .40 caliber pistol). 2. Microscopic examination disclosed that Exhibit 3 and Exhibit 5 were fired from the same firearm as Exhibit 1 (test fires). 3. Microscopic examination disclosed that Exhibit 2 and Exhibit 4 were fired from the same firearm; however they were not fired in the same firearm as Exhibit 1 (test fires).
UQFGRK	Items #3 and #5 fired from same firearm as Item #1. Identification based on agreement of class and individual characteristics of land impression marks. Items #2 and #4 fired from same firearm. Items 2 and 4 not fired from same firearm as Items #1, #3 and 5.
UVC9YW	Item 1 are .40 caliber/10mm copper full metal jacketed bullets fired from a Ruger pistol, Model P94DC rifled with six grooves, right twist. Items 2, 3, 4, and 5 are .40 caliber /10mm copper full metal jacketed bullets that were fired from a barrel rifled with six grooves, right twist. Items 3 and 5 were identified as having been fired from the same barrel as the Item 1 bullets. Items 2 and 4 were identified as having been fired from the same barrel. Due to a lack of sufficient corresponding microscopic marks of value, no conclusion would be reached as to whether the Item 2 and Item 4 bullets were fired from the same barrel as the Item 1 bullets. A GRC of the [Laboratory]'s General Rifling Characteristic (GRC) database produced a list of firearms with GRCs like those present on the Item 2 and Item 4 bullets that includes pistols marketed by Heckler & Koch, Ruger, and Taurus.
UYTKK6	1. The submitted fired bullets, Items 3 and 5, were fired from the same firearm as the submitted test fired bullets, Item 1. 2. The submitted fired bullets, Items 2 and 4, were fired from the same firearm. 3. Due to the lack of corresponding patterns of individual characteristics, the submitted fired bullets, Items 2 and 4, were unable to be eliminated or identified as having been fired from the same firearm as the submitted test fired bullets, Item 1, or the submitted fired bullets, Items 3 and 5. 4. The submitted fired bullets, Items 2 and 4 are consistent with being .40 caliber class bullets that were fired from a firearm having six lands and grooves, right twist. A list of possible calibers would include, but not be limited to: .40 S&W and 10mm auto. A list of possible firearm manufacturers would include, but not be limited to the following: Astra, Beretta, Fabrique Nationale, Heckler and Koch, Heritage Arms, Ruger, Springfield, and Taurus firearms.
V2DU8C	Items 3 and 5 were fired in the same firearm as Item 1 (identification). This conclusion was verified by Firearms Examiner [Name]. Items 2 and 4 could not be identified or eliminated as having been fired in the same firearm as Item 1 (inconclusive). This conclusion was verified by Firearms Examiner [Name]. Items 2 and 4 were fired in the same firearm (identification). This conclusion was verified by Firearms Examiner [Name].
V2XFXG	Items 3 and 5 has been fired out of the same barrel than the "known" bullets -> the same firearm 1 barrel. Items 2 and 4 has been fired out of an other barrel than the "known" bullets -> an other firearm 1 barrel
V3TY24	The bullets items 3 and 5 were both fired by the same firearm; the recovered Ruger P94DC. The bullets at the items 2 and 4 were fired by the same firearm but they were not fired by the firearm at the item 1. These 2 firearms are different but are the same type, they have 6 lands RH and the same lenght[sic] of land. Conclusion: Two differents[sic] weapons have been used on the scene Ruger P94DC pistol seized from residence's suspect is one of firearms used on the

TABLE 2

WebCode	Conclusions
	scene.
V3UXZH	2. On 2015-08-06 during the performance of my official duties I received a sealed evidence bag with number PA4001486494 from Case Administration of the Ballistics Section, containing the following exhibits: 2.1: Three (3) .40 caliber fired bullets marked by me TB1A, TB1B, and TB1C respectively. 2.2: Four (4) .40 caliber fired bullets marked by me "173586/13 2", "173586/13 3", "173586/13 4" and "173586/13 5" respectively. 3. The intention and scope of this forensic examination comprise the following: 3.1: The examination and identification of fired bullets. 3.2: Microscopic individualization of fired bullets. 4. I examined the fired bullets mentioned in paragraphs 2.1 and 2.2 and compared the individual and class characteristics markings on them using a comparison microscope and found: 4.1: The bullets mentioned in paragraph 2.1 and the bullets mentioned in paragraph 2.2 marked ""173586/13 3" and "173586/13 5" respectively were fired from one firearm. 4.2: The bullets mentioned in paragraph 2.2 marked "173586/13 2" and "173586/13 4" respectively were fired from a second firearm.
V4NLGR	The evidence in items 1 through 5 was analyzed by physical and microscopic examination. The four (4) bullets in items 2 through 5 were 40 caliber bullets which had been fired from the barrel of weapons rifled with six (6) lands and grooves, right twist. The two (2) bullets in items 2 and 4 were determined not to have been fired from the same weapon as the known bullets in item 1. The two (2) bullets in items 2 and 4 were fired from one weapon and further analysis is pending submission of another weapon for additional comparison. The two (2) bullets in items 3 and 5 were determined to have been fired from the same weapon as the known bullets in item 1.
VBN27Z	The fired bullets submitted as Items 2, 3, 4, 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 bullets submitted as Items 3 and 5 were fired from the same firearm that fired the bullets submitted as Item 1. The fired bullets submitted as Items 2 and 4 were fired the same firearm but not from the firearm that fired Item 1.
VDRWMH	Items #3 and #5 were identified as having been fired from the item #1 pistol. Items #2 and #4 were identified as having been fired from the same unknown firearm. (unknown firearm #1)
VFG6WJ	After microscopic comparison it was determined that Items #3 and #5 were fired from the submitted Ruger P94DC .40 caliber handgun based on sufficient agreement of class and individual characteristics of land engraved areas of the submitted evidence. Items #2 and #4 share sufficient class characteristics but lack sufficient individual characteristics, resulting in a finding of inconclusive. Items #2 and #4 share both class and individual characteristics.
VMGG78	Items #1, #2, #3, #4, and #5 were microscopically examined and determined to be suitable for comparison due to the presence of sufficient class and individual characteristics. Items #1, #3, 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, #3, and #5 are identified as having been fired from the same firearm. Item #2 and Item #4 were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, Items #2 and #4 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 x and y are eliminated as having been fired from the same firearm. Items #2 and #4 were examined and found to be consistent with .40 caliber.

TABLE 2

WebCode	Conclusions
VNQLHB	The Item 1 bullets were determined to have been fired from the same firearm. Items 2 and 4 were eliminated as having been fired from the same firearm as Item 1. Items 2 and 4 were identified as having been fired from the same unknown firearm. Items 3 and 5 were identified as having been fired from the same firearm as Item 1.
VPL6JC	[No conclusions reported.]
VUE7MC	[No conclusions reported.]
VXG8N9	Item #2: The bullet was compared to the test-fired exemplars, Item #1, obtained from the Ruger pistol. Differences in the individual barrel signatures were observed to conclude that the bullet was not fired from the pistol. Item #3: The bullet was compared to the test-fired exemplars, Item #1, obtained from the Ruger pistol. Sufficient corresponding individual barrel signatures were observed to conclude that the bullet was fired from the pistol. Item #4: The bullet was compared to the test-fired exemplars, Item #1, obtained from the Ruger pistol. Differences in the individual barrel signatures were observed to conclude that the bullet was not fired from the pistol. Item #5: The bullet was compared to the test-fired exemplars, Item #1, obtained from the Ruger pistol. Sufficient corresponding individual barrel signatures were observed to conclude that the bullet was fired from the pistol.
W2BADG	Following a detailed macroscopic examination, in my opinion, bullets number 1, 3 and 5 were fired from the same pistol. Bullets number 2 & 4 were not discharged from the Ruger P94DC 0.40" Calibre handgun that fired items 1, 3 & 5.
W4JHM2	Using the Bayesian approach in casework we view our findings under two hypotheses, namely: H1: The questioned bullet was fired by the submitted firearm. H2: The questioned bullet was fired by another firearm of the same caliber and with the same class characteristics as the submitted firearm. The likelihood of the findings under the two hypotheses is estimated. The likelihood ratio is expressed on a 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). Item 2: The findings are extremely more probable when H2 is true than when H1 is true. Item 3: The findings are extremely more probable when H1 is true than when H2 is true. Item 4: The findings are extremely more probable when H2 is true than when H1 is true. Item 5: The findings are extremely more probable when H1 is true than when H2 is true.
W8KKJ3	Item 1 (three bullets said to be test fired from a Ruger Model P94DC 40 S&W caliber pistol) and Items 3 and 5 (two bullets) were fired by the same firearm. Items 2 and 4 (two bullets) were fired by the same firearm. Items 1, 3 and 5 were fired from a different firearm than Items 2 and 4.
W8Y9J9	Items 3 and 5 were identified as having been fired from the same firearm as the three bullets contained in Item 1. Items 2 and 4 were not fired from the same firearm as Items 1, 3 and 5. Items 2 and 4 were fired from the same firearm.
WHFX4M	ITEM 3 & 5 POSSITIVE WITH ITEM 1 (IDENTIFICATION). ITEM 2 & 4 NEGATIVE WITH ITEM 1 (EXCLU8ION), BUT POSSITIVE BETWEEN THEM (THEY WERE FIRED THROUGH A SECOND GUN) [sic]
WLFA28	The bullets marked 3;5 were fired from the same firearm (know[sic] exhibit). The bullets marked 2; 4 were not fired from the know[sic] firearm.
WMXTD7	Item A1-1 was compared to item A1-3. Items A1-3 and A1-1, .40 caliber FMJ fired bullets, were identified as having been fired from the same firearm. Item A1-1 was compared to item A1-5. Items A1-5 and A1-1, .40 caliber FMJ fired bullets, were identified as having been fired

TABLE 2

WebCode	Conclusions
	from the same firearm. Item A1-1 was compared to items A1-2 and A1-4. Due to the differences between individual characteristics, the Items A1-2 and A1-4 bullets were eliminated as having been fired from the same firearm as the bullets from Item A1-1.
WRMF2K	The rifling impressions and the striations on the bearing surface of the item 3 and 5 match the marks on the item 1. In addition, the item 2 and 4 seemed to be shot from a same gun for the same reason. However, the striations on those two bullets (item 2 and 4) and marks on the item 1 did not fall into line. Consequently, the item 3 and 5 should be shot from the same handgun which was seized from the suspect's residence, and the item 2 and 4 seem to be shot from another gun.
WTFL4W	The projectiles in Items 3 and 5 were fired in the same gun that fired the projectiles in Item 1. The projectiles in Items 2 and 4 bear class characteristics consistent with those observed on the projectiles in Item 1. However, no significant similarities in individual characteristics were observed. Therefore, Items 2 and 4 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. The projectiles in Items 2 and 4 were fired in the same gun.
WVRZ4C	[No conclusions reported.]
X693ZX	1) Item 3 and Item 5 were discharged from the same firearm as Item 1. 2) Item 2 and Item 4 were not discharged from the same firearm as Item 1. 3) Item 2 and Item 4 were discharged from the same unknown firearm.
X98J7R	Conclusion: Microscopic comparison was conducted, with the following results: B2 and B4 were fired from pistol P-1. B1 and B3 were fired from the same firearm not pistol P-1
X9CYEL	Comparative examinations of Items 3 and 5 (two bullets) against Item 1 (three bullets said to be test fired from a Ruger Model P94DC 40 Smith and Wesson caliber pistol) showed the presence of matching features. This means that Items 3 and 5 were fired from the same firearm that fired Item 1. It could not be determined if Items 2 and 4 (two bullets) were fired from the same firearm that fired Item 1. The comparative examinations showed disagreement of individual characteristics, but insufficient for an elimination. The comparative examinations were inconclusive. Comparative examinations of Items 2 and 4 showed the presence of matching features, indicating they were fired from the same firearm.
XGF6ZM	Crime Lab Log Number# 14947. K=KNOWN / Q=QUESTION. Item #1/K1 test fired bullets were compared against question bullets #2/Q1, #3/Q2, #4/Q3, and #5/Q4, with the following conclusion; #2/Q1 & #4/Q3: The 40 caliber bullets were compared against #1/K1 test fires, and there are sufficient microscopic detail to determine they were not fired in the same firearm as #1/K1. However, they were both fired from a single different firearm. #3/Q2 & #5/Q4: The 40 caliber bullets were compared against #1/K1 test fires, and there are sufficient microscopic detail to determined they were fired from the same firearm as #1/K1.
XHAV4G	Based on bullets individual characteristics, the hypothesis that items 3 and 5 were fired by the recovered weapon is strongly supported. Based on bullets individual characteristics, the hypothesis that items 2 and 4 were fired from a unique firearm, different from the recovered weapon, is strongly supported.
XJBV8Z	Test bullets (Item 1) were compared microscopically with Items 2, 3, 4 and 5. There is an Identification with Items 3 and 5. There are sufficient agreement of class and individual characteristics on the bullets to conclude that they were fired from the recovered firearm (Item 1). Items 2 and 4 were not fired from the recovered firearm.

TABLE 2

WebCode	Conclusions
XM6XX9	All the exhibits and the tests were fired from the same firearm.
XMR4H9	Items marked 2 and 4 are positive to each other (one firearm). Items marked 3 and 5 are positive to items marked 1.
XNLUMM	Items 3 and 5: The bullets were identified as having been fired from the recovered firearm. Items 2 and 4: The bullets were identified as having been fired from the same unknown firearm. Furthermore, the bullets were not fired from the recovered firearm. The bullets were determined to be of 40/10mm caliber displaying rifling characteristics of six lands and grooves, right twist. Manufacturers of firearms with similar rifling characteristics include, but are not limited to, Astra, Heckler & Koch, and Ruger.
XTWZ8Z	Items #2 and #4 (two ~.40 S&W caliber FMJ-Truncated projectiles) were examined and microscopically compared on 08/26/2015. Based on agreement of all discernable class characteristics and sufficient agreement of individual characteristics, Items #2 and #4 were positively identified as having been fired from the same firearm. Based on agreement of all discernable class characteristics but disagreement of individual characteristics, Items #2 and #4 (two ~.40 S&W caliber FMJ-Truncated projectiles) were eliminated as having been fired from Item #1 (Ruger pistol). The General Rifling Characteristics (GRC) of Items #2 and #4 (two ~.40 S&W caliber FMJ-Truncated projectiles) are consistent with firearms manufactured by Ruger, FNH (Fabrique Nationale), Taurus, H&K, and Springfield; however, this listing is inconclusive. No firearm was submitted. Items #3 and #5 (two ~.40 S&W caliber FMJ-Truncated projectiles) were examined and microscopically compared on 08/26/2015. Based on agreement of all discernable class characteristics and sufficient agreement of individual characteristics, Items #3 and #5 (two ~.40 S&W caliber FMJ-Truncated projectiles) were positively identified as having been fired from Item #1 (Ruger pistol).
XYLK7A	1. Fired bullets (tests) marked Item 1 and fired bullets marked Item 3 and 5 were fired from the same firearm. 2. Fired bullets marked Item 2 and 4 were fired from the same firearm, however they were not fired from the same firearm as those mentioned in 1. (Second unknown firearm)
Y26VJJ	On examination I found that: a) The characteristic marks on the questioned bullets "Item 3" and "Item 5" were similar to the characteristic marks on the recovered firearm bullet "Item 1". b) The characteristic marks on the questioned bullets "Item 2" and "Item 4" were different from the characteristic marks on the recovered firearm bullet "Item 1".
Y327RE	Projectiles B (Item 3) and D (Item 5) were fired in the submitted .40 S&W Ruger Pistol, model P94DC, serial number unknown (Item 1). Projectiles A (Item 2) and C (Item 4) were fired in a second .40 S&W caliber weapon. The specific brand of the suspect weapon is unknown; however, any suspect weapon should be submitted for examination.
Y8AXLY	1) The submitted items #3 and #5 were microscopically examined and compared to tests fired from the submitted Ruger 40S&W caliber model P94DC, auto-loading pistol; They were positively identified as having been fired from this pistol. 2) The submitted items #2 and #4 were microscopically examined and compared to tests fired from the submitted Ruger 40 S&W caliber model P94DC, auto-loading pistol; They can be eliminated as having been fired from the Ruger pistol. 3) The submitted items #2 and #4 were microscopically examined and compared to each other and were positively identified as having been fired from the same firearm.
YAZV9H	Through the use of microscopic comparisons, it was determined that Items 2 and 4 were fired by the same firearm. Also, Items 3 and 5 were fired by a different firearm. The three test-fired missiles from the Ruger model P94DC pistol (Item 1) were microscopically examined and compared to Items 2-5. It was determined that Items 3 and 5 were fired by the Ruger model

TABLE 2

WebCode	Conclusions
	P94DC pistol.
YETY84	Item #3 (First bullet recovered from the ceiling at the scene) and Item #5 (Bullet recovered from the wall at the scene) were each identified as having been fired from Item #1 (Three bullets fired using the recovered firearm). Item #2 (Bullet recovered from the victim) and Item #4 (Second bullet recovered from the ceiling at the scene) were each examined and found to be consistent in all observable class characteristics (caliber, number and width of lands and grooves, direction of twist. While there is some disagreement of individual microscopic markings, the markings present are insufficient for an elimination. Therefore, the result is inconclusive.* Items #2 and #4 were each identified as having been fired in the same firearm.
YHR7LY	Items 2, 3, 4 & 5 were microscopically compared to each other and to test shots from the Ruger P94DC handgun, Item 1. Items 3 & 5 were identified as having been fired from the recovered Ruger P94DC handgun, Item 1, based on sufficient correspondence of individual characteristics observed in the land impressions. Items 2 & 4 were eliminated as having been fired from the submitted Ruger P94DC handgun, Item 1, due to different individual characteristics.
YQKHNU	The bullets, (items 1.1, 1.3, and 1.5) were identified as having been fired from the same firearm. The bullets, (items 1.2 and 1.4) were identified as having been fired from a second firearm.
YTTW3Z	The two 40 caliber class bullets (Items 3 and 5) were fired from the same firearm as the submitted test fired bullets (Item 1). The two 40 caliber class bullets (Items 2 and 4) were fired from the same firearm, however, they were not fired from the same firearm as the submitted test fired bullets (Item 1).
YW42EM	First.- We have found a technical and solid base to get a positive identification among the test bullets, fired from the Ruger model P94DC pistol, and evidence bullets n° 3 and 5, so we can affirm, beyond any doubt, that these projectiles have been fired using the Ruger pistol. Second.- We have found matches in class and individual characteristics between bullets n° 2 and 4. Both were fired with the same firearm. Third.- The examination between bullets n° 2 and 4 and test bullets, drove us to get a negative conclusion. We can affirm that this pair of projectiles were not fired with the Ruger pistol seized.
ZBNLW9	I found sufficient corresponding individual microscopic marks between Item 1, Item 3 and Item 5 to conclude that the bullets Item 3 and 5 were fired in the same firearm as used to fire the test fired bullets Item 1. Items 2 and 4 have sufficient corresponding individual marks to conclude they were both fired in a single firearm. They have similar class of rifling as test fires item 1, however there are sufficient differences in individual marks to conclude they were not fired in the same firearm as used to fire the test fired bullets Item 1. Items 2 and 4 were fired from a second 40 S&W caliber pistol.
ZFV8KT	(1) Microscopic Comparative Examination of bullets B-2 (Item #3) + B-4 (Item #5) against each other and Pistol P-1 (Item#1), disclosed that bullets B-2 + B-4 were fired in pistol P-1. (2) Microscopic Comparative Examination of Bullets B-1 (Item#2) and B-3 (Item #4) against each other, disclosed that B-1 and B-3 were fired in the same firearm. (3) Microscopic comparative examination of bullets B-1 (Item#2 and B-3 (Item#4) against Pistol P-1 (Item #1), Bullet B-2 (Item #3 and B-4 (Item #5), disclosed that there were insufficient corresponding microscopic markings to permit a positive identification (Inconclusive).
ZH8XX4	Microscopic Comparison make between test shot bullets from submitted Weapon (Item 1) and recovered Bullets from the victim and scene (Items 2, Item 3, Item 4, & Item 5) with the following Results: Item 2 - Negative, Item 3 - Positive, Item 4 - Negative, Item 5 - Positive.

TABLE 2

WebCode	Conclusions
	Items 3 & 5 were fired from the submitted Weapon.
ZM696A	Sub-items 001B through 001E are nominal 40/10 mm caliber, full metal jacket bullets bearing six lands and grooves inclined to the right. These sub-items were compared microscopically to the test-fired bullets from the recovered firearm, sub-item 001A, using a comparison microscope. Based on these comparisons, it was determined sub-items 001C and 001E (CTS items 3 and 5) were fired from the recovered handgun. The comparison of sub-items 001B and 001D (CTS items 2 and 4) to the test-fired bullets was inconclusive. There was agreement of general rifling characteristics but insufficient agreement of individual characteristics to the test-fired bullets for an identification. Sub-items 001B and 001D were compared to one another using a comparison microscope. Based on these comparisons, it was determined sub-items 001B and 001D were both fired from the same firearm, and indicates a different firearm than the recovered handgun. A list of possible manufacturers of firearms from which these bullets may have been fired would include, but would not be limited to Astra, Heckler & Koch, Ruger, and Taurus.
ZPQDFR	1. Examinations showed Item 3 and Item 5 were discharged from the same firearm as Item 1. 2. Examinations showed Item 2 and Item 4 were not discharged from the same firearm as Item 1. 3. Examinations showed Item 2 and Item 4 were discharged from the same unknown firearm.
ZQZ29R	Items 3 and 5 were fired in the same weapon that fired item 1. Items 2 and 4 were fired in another same weapon.
ZRCUUT	The reference projectiles fired from the Ruger pistol, specimen #1, were compared to the copper jacketed projectiles, specimens #2 through #5. Further examination revealed the following: Specimens #3 and #5 were fired from the Ruger pistol, specimen #1. Specimens #2 and #4 were not fired from the Ruger pistol; specimen #1, due to differences in the individual striations; however, they were fired from the same weapon. Specimens #2 and #4 were consistent with .40 caliber class ammunition (which includes .40 S&W) and were fired from the barrel of a firearm that possessed six lands and grooves with a right twist.
ZVEZ9C	The Exhibit #1.1, #1.2, #1.3, #3, and #5 bullets were fired from the same firearm. The Exhibit #2 and #4 bullets were not fired from the same firearm as the Exhibit #1.1, #1.2, #1.3, #3, and #5 bullets. The Exhibit #2 and #4 bullets were fired from the same firearm. The bullets are 40/10mm caliber class and display rifling characteristics similar to 40 S&W and 10mm Auto caliber firearms by Heckler & Koch, Ruger, Springfield Inc., and Taurus among others.
ZVQPAQ	Item 3 and Item 5 were found to have been fired by the recovered firearm. Items 2 and 4 were not fired by the recovered firearm but were fired by a different firearm. Two firearms were used.
ZVRFNL	Bullets (3, 5) and test fire bullets (1,1,1) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, bullets (3,5) and test fire bullets (1,1,1) are all identified as having been discharged from the above firearm. Bullets (2,4) were microscopically examined and compared. Based on the observed agreement of their class characteristics and sufficient agreement of their individual characteristics, bullets (2,4) are identified as having been discharged from a second firearm.
ZW7WP7	Items 3 and 5 were identified as having been fired from the same firearm as the specimens contained in Item 1 based on agreement of the combination of individual characteristics and all discernible class characteristics. Item 1 is reported to be three test fired specimens from a 40 S&W Ruger 94DC pistol. Items 2 and 4 were identified as having been fired from the same

TABLE 2

WebCode	Conclusions
	<p>unknown firearm based on agreement of the combination of individual characteristics and all discernible class characteristics. Items 2 and 4 were eliminated as having been fired from the same firearm as Item 1 and Items 3 and 5 due to disagreement of individual characteristics. Items 2 and 4 are 40/10mm caliber-class bullets fired from a firearm with a rifling system of six (6) lands and grooves with a right twist. Among the more common firearms that could have possibly fired Items 2 and 4 include, but are not limited to, the following: Astra, Beretta, Fabrique Nationale, Heckler & Koch, Ruger, Springfield Inc., and Taurus brands 40 S&W semi-automatic pistols. There were no common 10mm Auto firearms included in the GRC search results. This is not meant to be an all-inclusive list but rather an investigative aide; and any suspect firearm(s) of the appropriate caliber-class should be submitted for comparison. Current Integrated Ballistics Identification System (IBIS) / BrassTRAX technology in this laboratory is not capable of bullet imaging; therefore no entry was made.</p>

Additional Comments

TABLE 3

WebCode	Additional Comments
23BTBR	Compared Items 2 and 4 to each other. ID them to each other.
2KUWP7	The class characteristics are the same but the individual characteristics are not sufficient.
2N4CUN	Laboratory policy states that exclusions can only be made by class characteristic differences.
39W9D4	During the second examination of Items 1-5, the second examiner could not agree on the original conclusion of elimination regarding Items 2 and 4 having not been fired in the same firearm as Items 1, 3, and 5. Per laboratory policy, the conclusion was changed from elimination to inconclusive to report out a more conservative result.
3GKDTH	Unknown pistol have been fired bullet that kills him/her victim.
6EPHDD	The two bullets of the items #2 and 4 were fired in one same firearm, which could be of the same make and model of the gun examined[sic].
6FMNPQ	The twist and dimensions of the rifling on Items 2 and Item 4 closely match the rifling marks found on the test bullets in Item 1. In addition, there are similarities in the general appearance of the striae found within the land and groove impressions on these bullets. For these reasons, I choose not to exclude the recovered firearm.
6KHLCV	Items 2 and 4 exhibited class agreement to the Item 1 test fired bullets. Additionally, the Item 2 and 4 bullets exhibited some possible subclass agreement with the Item 1 bullets (noted through the correspondence of some gross characteristics, but a lack in both quality and quantity of other corresponding characteristics). Subclass carryover has been observed and published with regard to Ruger brand pistols, and also contributed to the inconclusive result when inter-comparing Items 1, 2, and 4.
6TTQCU	Strength of Associations Made in the Identification of Firearm-Produced Toolmarks[sic]. The identification of bullets to the same known or unknown firearm is made to the practical, not absolute, exclusion of all other firearms. This is because it is not possible to examine all other firearms in the world, a prerequisite for absolute certainty. The conclusion that sufficient agreement for identification exists between two firearm-produced toolmarks means that the likelihood another firearm could have made the questioned mark is so remote as to be considered a practical impossibility.
7B3AJH	All submitted bullets exhibit the same class characteristics. Item 2 and Item 4 have no significant corresponding individual characteristics with the other bullets submitted. Our unit standard operating procedures require the conclusion to be "inconclusive" in such circumstances.
7E8XY8	The individual characteristics are reproducing in the bullets fired from the firearm (Items 1, 3, and 5). Some disagreement was observed between the test fired bullets (Item 1) and Items 2 and 4. There is no indication that these 2 bullets (Items 2 and 4) were fired from the firearm. However, the class characteristics are in agreement and laboratory policy/practice discourages examiners to eliminate solely on individual characteristics.
7EKE8F	2 matches 4. 3 matches 5. 3 & 5 match with the reference bullets 1.
7UGLB9	Items #2 and #4 lacked sufficient individual characteristic agreement for identification with test fired bullets from Item #1. However, these bullets could have been discharged from the barrel of item #1 based on an agreement of class characteristics. After microscopic comparison, it was determined that items #2 and #4 were fired from the same firearm based on sufficient agreement of class and individual characteristics of land impression marks. After

TABLE 3

WebCode	Additional Comments
	examination, item #2 was determined to be a 180.4 grain copper jacket bullet consistent with caliber .40 S&W. This bullet was discharged from the barrel of a firearm having six right rifling. After examination, item #4 was determined to be a 180.6 grain copper jacket bullet consistent with caliber .40 S&W. This bullet was discharged from the barrel of a firearm having six right rifling.
8CD8TT	I measured the land and groove impression widths of Item 2 (Lab Item 001-02) and Item 4 (Lab Item 001-04). The class characteristics were referenced to the General Rifling Characteristics (GRC) File. According to the GRC, twenty-one .40 S&W caliber pistols and one 10mm Auto caliber submachine gun could have fired these bullets.
8KPKBP	The exercise was practical for the application to the comparative studies of Bullet that realizes the ballistics group of [City] in [Country]; activity that is very frequent in this laboratory by material evidence submitted for analysis of criminal cases which use one or more firearms.
8NTGXX	Items 2 and 4 were determined to be inconclusive to Items 1, 3, and 5. Items 2 and 4 were identified to each other, but there were not enough differences of individual characteristics for me to eliminate Items 2 and 4 from being fired in the same firearm as Items 1, 3, and 5. My original conclusion was an elimination of Items 2 and 4 to Items 1, 3, and 5. However, the second examiner did not agree with elimination. So I choose the more conservative choice and went with inconclusive.
98Z3YW	My original conclusion for Items 2 and 4 was that they were not fired in Item 1 (elimination). The second examiner's conclusion for Items 2 and 4 was they could not be identified or eliminated as having been fired in Item 1 (inconclusive). Based on the laboratory protocols, the conclusion that is more conservative should be reported.
9LHTZK	The projectiles in Items 2 and 4 were consistent in class characteristics with those produced by the gun that produced the test fires in Item 1. However, due to insufficient reproducible individual characteristics, the projectiles in Items 2 and 4 could not be positively included or excluded as having been fired in the same gun that produced the test fires in Item 1 to the exclusion of all other firearms with the same class characteristics.
AC9K34	* 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.
ALEF9G	Laboratory policy states that exclusions can only be made based on class characteristic differences.
AR3DHQ	The two FMJ bullets (items 2, 4) were compared to the other FMJ bullets (items 1, 3, 5). The results of these comparisons were inconclusive - it was not determined if the bullets (items 2, 4) were fired by the same firearm as the other FMJ bullets (items 1, 3, 5) due to disagreement of individual marks insufficient for elimination in the presence of similar GRC.
BPCAPJ	Items 2 and 4 have been fired with the same gun.
BRDKD7	In normal case work I would attach the list of possible firearm manufacturers/origins to the report in PDF form.
BYXH4E	The characteristic marks of the recovered bullets Item 2 and Item 4 are similar and they were fired from the same firearm.

TABLE 3

WebCode	Additional Comments
C6DPUH	Through the comparative microscopic analysis it was established that in the homicide that occurred[sic] at the movie theater[sic] two .40 ammunition handguns were used. The recovered bullet from the victim (Item 2) was not fired with the handgun seized from the suspect at his residence.
CABZDW	The bullets Item 2 and Item 4 are fired in the same unknown handgun.
CVBDRM	The Items 01-02 and 01-04 bullet was unable to be identified or eliminated as having been fired from the same firearm as the Items 01-01, 01-03, and 01-05 bullets due to agreement of all discernible class characteristics and insufficient agreement or disagreement of individual characteristics for an identification or elimination, respectively, to be reached. Minor differences in bullet LWD and GWD were noted between the two groups (Items 01-02 and 01-04 in one group and Items 01-01, 01-03, and 01-05 in the other group), but insufficient for an elimination.
DBKGT8	Based on the agreement of class characteristics and sufficient agreement of individual characteristics, the bullets marked "Item 2" and "Item 4" were fired from a second unknown firearm.
DJGDLF	The items 2 and 4 bullets were identified as having been fired from the same unknown firearm, based on the correspondence of the individual characteristics.
DMHAFD	[A full methods and limitations section was included, but could not be reproduced here.]
DMXPRT	I originally concluded that Items 2 and 4 were not fired in the same firearm as Items 1, 3, and 5 (elimination) based on differences observed in the individual characteristics of the items, however the second examiner was not comfortable eliminating. Following the section's SOP, the more conservative conclusion of inconclusive was used.
GTVAAS	Eliminations in this laboratory are based on observed differences in class characteristics (including distinct differences in patterns of individual characteristics). The potential for subclass characteristics, without the benefit of examining the firearm, would be very difficult to evaluate in this case. The class characteristics of Items 2 and 4 are not sufficiently different from those of the test shots, Item 1, to allow for a basis of an elimination conclusion.
H2LGBW	Fired bullets 'Item 2' and 'Item 4' were fired from a second unknown firearm.
HVFLH	The two submitted fired bullets (Items 1-02-AA and 1-04-AA) were fired from a firearm capable of chambering and firing a 10mm Auto/.40 S&W caliber cartridge. Possible manufacturers of the firearm that fired Items 1-02-AA and 1-04-AA include, but should not be limited to: 10mm Auto caliber pistols manufactured by Heckler & Koch and .40 S&W caliber pistols manufactured by Astra, Fabrique Nationale, Heckler & Koch, Ruger, Springfield Inc., and Taurus.
J83BUM	Items 2 and 4 were consistent in class with Items 1, 3, and 5. Although some individual differences were observed between Items 2 and 4 and Items 1, 3, and 5, these differences were not sufficient to render an elimination.
JEFFD7	Elimination of Items 2 + 4 from other set of bullets (1, 3, 5) was based on significant differences of individual characteristics. Two distinct sets of bullets w/ reproducing distinct markings (2+4) + (1, 3, 5). SWGGUN elimination factors based on indiv. char. were all considered.
JGBRJ8	[A full methods and limitations section was included, but could not be reproduced here.]
K2AFN9	[A full methods and limitations section was included, but could not be reproduced here.]
K6RPLC	BULLETS THAT INSCRIBED ITEM #2 AND ITEM #4 WERE FIRED FROM THE SAME BARREL

TABLE 3

WebCode	Additional Comments
	BUT DIFFERENT FROM THE SUSPECT GUN BARREL.
KBFE2F	The identifications of the toolmarks above are made to the practical, not absolute, exclusion of all other tools. This is because it is not possible to examine all firearms or tools in the world, a prerequisite for absolute certainty. The conclusion that sufficient agreement for identification exists between two toolmarks means that the likelihood another firearm or tool could have made the questioned mark is so remote as to be considered a practical impossibility.
KRLQJ8	There is a conformity of class characteristics (width of land and groove impressions) of three bullets Items 1 with bullet Item 4. However, the conformity of individual identification characteristics left in Item 1 and Item 4 is not sufficient to undoubtedly state that the bullet Item 4 was fired from the pistol Ruger P94DC cal. .40 held in evidence. Therefore during the research it was determined that the bullet Item 4 was probably fired from the pistol Ruger P94DC cal. .40 held in evidence probably yes.
L9RHU2	Following our Microscopic Comparison Procedures "Guidelines for Interpretation of Comparison Results" it is the opinion of this analyst that Items 2 and 4 are Inconclusive based on the agreement of all discernible class characteristics and disagreement of individual characteristics, but insufficient disagreement for an elimination. Whereas, the criteria for an Elimination requires significant disagreement of discernible class characteristics and/or significant disagreement of individual characteristics. Items 2 and 4 did not possess significant disagreement of individual characteristics to Items 1, 3 and 5.
LNZDGU	Items 2 and 4, the bullets, were fired through the barrel of the same firearm based upon corresponding class and individual microscopic characteristics.
LWBFQN	Questioned Bullets, Item 2 and Item 4 were not fired in the same firearm as the known bullets Item 1, however they were both fired in a different firearm. Two (2) different firearms were used to discharge the questioned bullets, Items 2, 3, 4 and 5.
MM2PDP	Final Results for Items 2 and 4: Inconclusive. Projectiles A (Item 2) and C (Item 4) have some correspondence of individual characteristics with Item 1. The amount of correspondence is insufficient; it is not consistent with what is seen in a known match. However, it exceeds the amount of correspondence that I expect to see in a known non-match.
MZUXKT	Our reporting process involves attaching the GRC results to the final report.
N3GUND	Items 1, 3 & 5 - Gun 1. Items 2 & 4 - Gun 2.
N9FFDR	Items 1 and 2 had agreement of all discernable class characteristics and disagreement of individual characteristics but insufficient for an elimination. Items 1 and 4 had agreement of all discernable class characteristics and disagreement of individual characteristics but insufficient for an elimination.
NC2FET	The weapon used seems belong to the same brand and model as that discovered.
Q7N2Z2	[A full methods and limitations section was included, but could not be reproduced here.]
REFWK4	Items 1B and 1D were identified as having been fired from same firearm based on the agreement of individual and class characteristics.
RM92L6	The bullets in Item 2 and 4 match well to each other. The bullets in Items 1, 3 and 5 match well to each other. The individual characteristics on each set are unique and have little or no correspondence to the other set. This suggests that Items 2 and 4 were fired by a different firearm. However, the history of the Item 1 firearm is not known from the time of the shooting until time of recovery. It could have been altered. Laboratory policy cautions on making exclusions based on individual characteristics alone. While I believe that Items 2 and 4 came

TABLE 3

WebCode	Additional Comments
	from a different firearm, I cannot confirm that at this time.
T3FRNM	IT IS LIKELY THAT THE TWO GUNS USED WERE OF THE SAME MAKE AND MODEL.
T3WZNN	I found the senario[sic] provided to be in very poor taste. My hope is that this did not get sent to any examiner that has personally been affected by the real life shooting that it seems you have referenced here.
THBADK	Laboratory policy discourages eliminating bullets with the same class characteristics based on disagreement of individual characteristics only. There is no indication that Items 2 and 4 were fired in the recovered Ruger pistol (that also fired Items 3 and 5).
TLC6C2	per SOP, inconclusive is defined as 'agreement of all discernible class characteristics and disagreement of individual characteristics, but insufficient for an elimination.' Elimination is defined as 'significant disagreement of class characteristics and /or individual characteristics'
UVC9YW	[A full methods and limitations section was included, but could not be reproduced here.]
V2DU8C	I had originally concluded that Items 2 and 4 were not fired in the same firearm as Item 1. However, during the verification process, the second examiner was conservative and would not agree on an elimination based on individual characteristics unless I had the actual firearm to perform more testing. Per our laboratory procedures, when the primary and second examiners disagree, the more conservative conclusion is reported out, which in this case was stating that Items 2 and 4 were inconclusive to being fired in the same firearm as Item 1.
V2XFXG	the quality of the samples was good. the difficulty was appropriate
VBN27Z	Onother[sic] gun of the same caliber but different suspect's weapon, was likewise used in the commission of the facts.
VFG6WJ	Additional test fires may be necessary to include or exclude Items #2 and #4.
W2BADG	Bullets number 2 & 4 were fired from the same 0.40" calibre pistol as each other.
W4JHM2	Similarities have been found between the markings in Item 2 and Item 4. This resulted in the following conclusion: H3: The questioned cartridge cases are fired by one firearm. H4: The questioned cartridge cases are fired by two firearms of the same caliber and with the same class characteristics. Item 2 and 4: the findings are extremely more probable when H3 is true, than when H4 is true. The translation from Bayesian conclusion to a categorical conclusion is not straightforward because differences in the overall approach of the evidential strength of traces. To translate our Bayesian conclusion to a yes/no/inconclusive conclusion a leap of faith has been made. For this test, conclusion are matched as follows: 'findings extremely more probable under H1 than H2' = Yes; 'findings extremely more probable H2 than H1' = No
W8KKJ3	Examinations of Items 2 and 4 showed them to be .40* caliber bullets fired from a firearm with six lands and grooves with a right twist. Firearms with this rifling pattern include, but are not limited to, those manufactured under the brand names Heckler & Koch, Taurus, FN/Browning, Ruger, Astra, and Springfield Inc.. *Specific cartridges of this caliber include, but are not limited to, 40 S&W and 10mm Auto.
X98J7R	Item #1: Pistol P-1, Item #2: B-1, Item #3: B-2, Item #4: B-3, Item #5: B-4
X9CYEL	As per Appendix C- Range of Conclusions from our SOP Manual: "The discipline recognizes that an elimination of a firearm by other than class characteristics is possible but that such an elimination is an exceptional situation." Comparative examinations of Item 1 against Items 2 and 4 showed disagreement of individual features but not to a level that could be considered to be exceptional. Without access to the firearm that was used to fire Item 1, the results of

TABLE 3

WebCode	Additional Comments
XJBV8Z	these examinations were reported conservatively as inconclusive.
YETY84	Items 2 and 4 were compared microscopically. The results of these comparisons are an Identification. There are sufficient agreement of class and individual characteristics on the bullets to conclude they were fired from the same firearm, which has yet to be identified.
ZH8XX4	*Laboratory policy prohibits exclusion based upon individual characteristics.
ZM696A	Microscopic Comparison made between Item 2 and Item 4 with Positive results. Items 2 and 4 were fired from the same (second) Weapon.
	Our laboratory generally does not eliminate based on individual characteristics.

Appendix

Collaborative Testing Services - Forensic Testing Program **Test No. 15-527: Firearms Examination**

DATA MUST BE RECEIVED BY September 14, 2015 TO BE INCLUDED IN THE REPORT

Participant Code:

WebCode:

Accreditation Release Statement

CTS submits external proficiency test data directly to ASCLD/LAB and ANAB. 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 and/or ANAB. (Accreditation Release section on the last page must be completed and submitted.)
- This participant's data is **NOT** intended for submission to ASCLD/LAB or ANAB.

Online Data Entry

Visit www.cts-portal.com to enter your proficiency test results online. If you have any questions please do not hesitate to contact CTS.

Scenario:

Police are investigating a homicide that occurred at a movie theater. 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 ceiling and one from the wall. A suspect was apprehended later that day and a handgun was seized from his residence. The firearm is a Ruger P94DC .40 handgun. Three rounds of Federal® American Eagle® .40 ammunition (which were consistent with the bullets recovered from the victim and 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 labeled jewel 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: Bullet recovered from victim (questioned).
- Item 3: First bullet recovered from the ceiling at the scene (questioned).
- Item 4: Second bullet recovered from the ceiling at the scene (questioned).
- Item 5: Bullet recovered from the wall at the scene (questioned).

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

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

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

Please return all pages of this data sheet.

Page 1 of 3

Participant Code:

WebCode:

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

3.) Additional Comments

<p>Return Instructions: Data must be received via online data entry, fax (please include a cover sheet), or mail by <i>September 14, 2015</i> to be included in the report.</p> <p>QUESTIONS? TEL: +1-571-434-1925 (8 am - 4:30 pm EST) EMAIL: forensics@cts-interlab.com www.ctsforensics.com</p>	<p>Participant Code:</p>
	<p>ONLINE DATA ENTRY: www.cts-portal.com FAX: +1-571-434-1937 or Toll-Free: 1-866-FAX-2CTS (329-2287) MAIL: Collaborative Testing Services, Inc. P.O. Box 650820 Sterling, VA 20165-0820 USA</p>

Please return all pages of this data sheet.

RELEASE OF DATA TO ACCREDITATION BODIES

The following Accreditation Releases will apply only to:

Participant Code:

WebCode:

for Test No. **15-527: Firearms Examination**

This release page must be completed and received by **September 14, 2015** to have this participant's submitted data included in the reports forwarded to the respective Accreditation Bodies.

ASCLD/LAB RELEASE

If your lab has been accredited by ASCLD/LAB and you are submitting this data as part of their external proficiency test requirements, have the laboratory's designated individual complete the following.

The information below must be completed in its entirety for the results to be submitted to ASCLD/LAB.

ASCLD/LAB Legacy Certificate No. _____ ASCLD/LAB International Certificate No. _____

Signature _____ Date _____

Laboratory Name _____

Location (City/State) _____

ANAB RELEASE

If your laboratory maintains its accreditation through ANAB, please complete the following form in its entirety to have your results forwarded.

ANAB Certificate No. _____

Signature and Title _____ Date _____

Laboratory Name _____

Location (City/State) _____

Accreditation Release

Return Instructions

Please submit the completed Accreditation Release at the same time as your full data sheet. See Data Sheet Return Instructions on the previous page.

*Questions? Contact us 8 am-4:30 pm EST
Telephone: +1-571-434-1925
email: forensics@cts-interlab.com*