



## **Shotgun Distance Determination Test No. 24-5306/7 Summary Report**

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Each sample pack consisted of a set of known shotgun distance standard patterns, one questioned shotgun pattern, and additional known distance standard patterns provided as supplemental digital images. Participants were asked to examine and report the range of distances that the muzzle of the shotgun could have been from the questioned target at the time of discharge. Data were returned from 49 participants: 35 for 24-5306 and 14 for 24-5307 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 pack consisted of a set of known shotgun distance standard patterns, one questioned shotgun pattern, and additional known distance standard patterns provided as supplemental digital images. Participants were asked to examine and report the range of distances that the muzzle of the shotgun could have been from the questioned target at the time of discharge.

**PATTERN PREPARATION:** The selected shotgun was set on a fixture and a paper target was placed at a predetermined distance from the shotgun muzzle. For the known standards, three consecutive shots were fired at each distance. For the questioned pattern, one shot was fired. After firing, all paper targets were photographed.

**SAMPLE PACK ASSEMBLY:** For the photo version, the first shot of each known distance standard and the questioned pattern were printed, rolled up, and placed into a pre-labeled sample pack plastic sleeve. The second and third consecutive shots of each known standard distance were then uploaded to the CTS Portal as supplemental digital images. For the digital download version, all items were uploaded to the CTS Portal.

**VERIFICATION:** Predistribution results were consistent with each other and the manufacturer's preparation information. All laboratories reported a greater than/less than distance range that was in close proximity to the preparation distance for the questioned pattern.

Preparation Information			
<u>Item</u>	<u>Distance (ft)</u>	<u>Firearm</u>	<u>Ammunition</u>
Known Standards	3 - 30 (3' increments)	Blue Line Pump 12-GA Shotgun	Sellier & Bellot 12 GA 2-3/4" 00 Buck Shot 9 pellet
Questioned Pattern	17	Blue Line Pump 12-GA Shotgun	Sellier & Bellot 12 GA 2-3/4" 00 Buck Shot 9 pellet

## **Summary Comments**

This test was designed to allow participants to assess their proficiency in determining the muzzle to target distance using known shotgun pattern distances. Participants were supplied with a set of known shotgun distance standard patterns, one questioned shotgun pattern, and additional known distance standard patterns provided as supplemental digital images. The questioned shotgun pattern was placed 17 feet away from the muzzle of the shotgun. Refer to the Manufacturer's Information for preparation details.

In all areas below where distance is discussed, the unit of measurement is feet.

In Table 1, all 49 responding participants (100%) reported a greater than distance between 9 and 18 and a less than distance between 18 and 30. In the Summary of this table, CTS has grouped the responses provided by the participants based on their greater than/less than distance results and provided a tally of the participants' ranges as calculated by CTS. The greater than mode was 15 and the less than mode was 24.

For calculated ranges, all of the participants (100%) reported a range of distances that spanned from 3 to 21. CTS reviewed the ranges based on participants' reported values and determined the most common reported range, the mode, was 12 feet.

The mode +/- two measurement increments was applied in all reporting fields (Greater Than, Less Than and Calculated Range), therefore any measurement or range of measurements outside of these values was highlighted as inconsistent.

CTS is aware that laboratory reporting policies differ and there are varying acceptable ranges. It will therefore be at the discretion of the laboratory to further evaluate participants' results based on their own policies and procedures.

CTS is also aware of the variation in pattern between the 6 feet and 9 feet consecutive shots, as also noted by participants. CTS provided three consecutive shots per distance to account for variation during production.

## Distance Determination Results

*What is the distance range that the muzzle of the shotgun could have been from the questioned target at the time of discharge? Please report a numeral response (e.g. "3") for the supplied distance standards.*

TABLE 1 (Distance in Feet)

WebCode- Test	Greater Than	Less Than	Calc. Range	WebCode- Test	Greater Than	Less Than	Calc. Range	WebCode- Test	Greater Than	Less Than	Calc. Range
2DCZT3- 5307	18	21	3	HX7A7N- 5306	15	21	6	RQV9ZC- 5306	15	27	12
62AMK2- 5306	15	27	12	J9YBXH- 5307	15	24	9	RXUYDZ- 5306	15	21	6
77WQTV- 5307	15	24	9	JHACJJ- 5306	15	24	9	TMN9F7- 5306	12	24	12
7E7F8U- 5306	12	24	12	JJHP2K- 5307	15	27	12	TVK639- 5306	12	27	15
8W43BY- 5306	15	21	6	JQGCTK- 5306	9	30	21	U93F44- 5306	15	24	9
8W8KAW- 5306	9	30	21	L38KQD- 5307	15	24	9	VU3V37- 5306	12	24	12
9MVQUV- 5306	15	21	6	LGMLLJ- 5306	15	18	3	W3R7P8- 5306	18	24	6
BQMTCR- 5306	15	30	15	LMTEFE- 5306	9	27	18	W9THL4- 5306	12	27	15
DFXMRT- 5306	13	21	8	LTWH6D- 5306	12	30	18	XEZ3A2- 5306	15	27	12
E8NK7R- 5306	15	24	9	M73VZJ- 5306	15	21	6	XG7QM6- 5306	15	27	12
EW3DAN- 5306	15	27	12	MDYQXG- 5307	12	21	9	YCPNFZ- 5306	15	24	9
F4V7UM- 5306	12	24	12	MU9EBH- 5307	18	24	6	YGLA83- 5307	12	24	12
F8VGQM- 5306	12	27	15	P4LJAC- 5307	12	30	18	YKHVY7- 5306	12	27	15
F9QZRN- 5307	15	24	9	PL7AAC- 5306	15	24	9	YYG3R2- 5307	12	30	18
FK8JCK- 5307	15	21	6	R74GG7- 5306	9	24	15	Z8RLP6- 5307	15	21	6
FQBQRN- 5306	12	27	15	R8GRUD- 5306	18	21	3				
FXUUYQ- 5306	12	21	9	RBG3PD- 5307	15	24	9				

<b>Response Summary</b>				<b>Participants: 49</b>	
<b>Greater Than Distance</b>	<b>Participants Reporting</b>	<b>Less Than Distance</b>	<b>Participants Reporting</b>	<b>CTS Calculated Range</b>	<b>Participants Reporting</b>
3	0 (0.00%)	3	0 (0.00%)	3	3 (6.12%)
6	0 (0.00%)	6	0 (0.00%)	6	9 (18.37%)
9	4 (8.16%)	9	0 (0.00%)	9	12 (24.49%)
12	15 (30.61%)	12	0 (0.00%)	12	11 (22.45%)
15	25 (51.02%)	15	0 (0.00%)	15	7 (14.29%)
18	4 (8.16%)	18	1 (2.04%)	18	4 (8.16%)
21	0 (0.00%)	21	12 (24.49%)	21	2 (4.08%)
24	0 (0.00%)	24	18 (36.73%)	24	0 (0.00%)
27	0 (0.00%)	27	12 (24.49%)	27	0 (0.00%)
30	0 (0.00%)	30	6 (12.24%)	30	0 (0.00%)
Other	1 (2.04%)	Other	0 (0.00%)	Other	1 (2.04%)
No Response	0 (0.00%)	No Response	0 (0.00%)		

# Conclusions

## TABLE 2

WebCode-Test	Conclusions
2DCZT3-5307	According to the shotgun patterns of the tests compared to the shotgun pattern recovered from the crime scene, the distance of the muzzle from the target was greater than 18 feet and less than 21 feet.
62AMK2-5306	3. On 2024-11-26 during the performance of my official duties I received an intact sealed evidence bag with number PAR000588792 marked inter alia CTS 24-5306C from Case Administration of the Ballistics Section. I opened the bag and found the following: 3.1 Ten (10) known shotgun pattern standards with reference distance "3", "6", "9", "12", "15", "18", "21", "24", "27" and "30" feet respectively not marked by me. 3.2 One (1) unknown shotgun pattern marked by me "593242/24". 4. The intention and scope of this forensic examination comprise the following: 4.1 Shot range determination. 5. I examined the unknown shotgun pattern mentioned in paragraph 3.2 against the provided known shotgun pattern standards mentioned in paragraph 3.1: 5.1 I am therefore of the opinion that the shot that caused the pattern was fired at a distance of between 457.20cm (15 feet) and 822.96cm (27 feet) away from the target.
77WQTV-5307	Items – Description/Visual Examination Questioned: One (1) questioned shot pattern (24-5307_Q). Known Standards: Ten (10) test shot patterns from distances of approximately 3 to 30 feet (24-5307_3a, 24-5307_6a, 24-5307_9a, 24-5307_12a, 24-5307_15a, 24-5307_18a, 24-5307_21a, 24-5307_24a, 24-5307_27a, & 24-5307_30a). Examination Results Questioned (24-5307_Q) – question shot pattern. Based on visual comparison, the question shot pattern (24-5307_Q) is consistent with test patterns (24-5307_15a, 24-5307_18a, 24-5307_21a, 24-5307_24a) produced between 15 and 24 feet. The approximate distance of the firearm muzzle from the Questioned shot pattern (24-5307_Q) at the time of firing is greater than 15 feet and less than 24 feet.
7E7F8U-5306	Based on a visual comparison to these test patterns, it is likely that the Exhibit 1 Questioned target pattern was produced at a muzzle-to-target distance of greater than 12 feet and less than 24 feet.
8W43BY-5306	The distance of the questioned distance is greater than 15 feet, less than 21 feet, and approximately 18 feet.
8W8KAW-5306	The photo of the questioned shotgun pattern, Exhibit 2, has damage to the centre of the panel that is consistent with having been caused by the passage of fired pellets traveling in a front to back direction. Using the known standard test panels, Exhibit 1, the damage and shotgun pellet pattern observed on the photo of the questioned shotgun pattern, Exhibit 2, is consistent with having been caused by a shot fired at a muzzle to target distance greater than 9 feet, with a maximum distance of beyond 30 feet, and most resembles a shot fired from 18 feet.
9MVQUV-5306	The damaged is consistent with the discharge of a shotgun with a muzzle to target range of between 15 and 21 feet.
BQMTCR-5306	In the absence of intervening object(s), the distance the muzzle of the shotgun could have been from the questioned target could be between 15 feet and 30 feet.
DFXMRT-5306	The shooting distance at the time of discharge is comprised between 13 and 21 ft.
E8NK7R-5306	By observing the test pattern from the question and by comparing with the known standards pattern, at the time of discharge, the target was placed at a distance greater than 15 feet and less than 24 feet.
EW3DAN-5306	In my opinion the shot was fired from a muzzle distance between 15 and 27 feet.
F4V7UM-5306	At the moment of discharge the muzzle of the gun was farther than 12 feet and closer than 24 feet from the target.

TABLE 2

WebCode- Test	Conclusions
F8VGQM- 5306	Item 1 Image of Questioned Shotgun Pattern exhibits multiple perforating defects consistent with a single shot from a shotgun produced when the muzzle of the shotgun was at a distance greater than 12 feet and less than 27 feet from the surface of the paper at the time the projectiles exited the muzzle of the firearm.
F9QZRN- 5307	The result of testing determined that the muzzle to target distance at the time of discharge was between 15 feet to 24 feet.
FK8JCK- 5307	The muzzle of the shotgun was greater than fifteen (15) feet and less than twenty-one (21) feet from the target when fired.
FQBQRN- 5306	Comparisons have been made between the questioned pattern and the control patterns. The findings indicate that the firing distance between the gun's muzzle and the surface of the questioned item pattern was between 12 and 27 feet.
FXUUYQ- 5306	The distance from which the shot was fired is between 12 feet and 21 feet.
HX7A7N- 5306	I examined the questionable (unknown) shotgun pellets dispersion pattern mentioned as appearing on the sheet and also took measurement of the pattern and compared it with known shotgun pellets dispersion patterns observed on the sheets and found: 2.1 The questionable (unknown) pellets dispersion pattern mentioned, indicate that the shot was fired in the range of between 4.6m (15 feet) and 6.4m (21 feet).
J9YBXH- 5307	The distance of firing between the muzzle of the shotgun used to produced the known distance standards and the questioned shotgun pattern (image 24-5307_Q.tif) was estimated to be between 15 feet and 24 feet.
JHACJJ- 5306	The end of the seized shotgun barrel was at a distance greater than 15ft and less than 24 ft when the shot was fired.
JJHP2K- 5307	When comparing the evidence shotgun pattern recovered by Police to the known test standards, it would indicate that a muzzle to target distance was greater than 15 feet and less than 27 feet.
JQGCTK- 5306	The questioned panel, Exhibit Questioned, has damage that is consistent with having been caused by the passage of fired shotshell components. Using the known standard, Exhibit Known Stds, the damage and firearm discharge pattern observed on the questioned panel, Exhibit Questioned, is consistent with having been caused by a shot fired between a muzzle to target distance greater than nine (9) feet and beyond thirty (30) feet. The questioned panel, Exhibit Questioned, most resembles a shot pattern fired at a distance of eighteen (18) feet.
L38KQD- 5307	The unknown pattern is consistently larger than the test patterns created at 15 feet and consistently smaller than the test patterns created at 24 feet. If the unknown pattern was created with the same shotgun and ammunition as the test patterns, it was created with a muzzle-to-target distance greater than 15 feet and less than 24 feet.
LGMLLJ- 5306	VISUAL COMPARISON HAS BEEN DONE TO FIND THE RESULT OF THE GIVEN CTS EXAMINATION
LMTEFE- 5306	The submitted photograph (Exhibit 1.1) was examined, and a shot pattern was found. The submitted known standards were examined and it was determined that the questioned shot pattern observed in Exhibit 1.1 was reproduced at a distance between 9 feet and 27 feet. No further analysis was conducted on the submitted evidence at this time.
LTWH6D- 5306	Item Q The sheet/target Item Q was examined and compared to the Known distance targets and found that the distance between muzzle and target is consistent with a distance of greater than 12 feet and less than 30 feet.

TABLE 2

WebCode-Test	Conclusions
M73VZJ-5306	I examined the questionable (unknown) shotgun pellets dispersion pattern mentioned as appearing on the sheet and also took measurement of the pattern and compared it with known shotgun pellets dispersion patterns observed on the sheets and found: 2.1 The questionable (unknown) pellets dispersion pattern mentioned, indicate that the shot was fired in the range of between 4.6m (15 feet) and 6.4m (21 feet).
MDYQXG-5307	The questioned pattern was visibly and dimensionally compared to the provided test patterns. It was determined that the questioned pattern was fired at a distance greater than 12 feet and less than 21 feet.
MU9EBH-5307	The Q1 shot pellet pattern is consistent, in pattern, size, and density, with having been produced at an approximate distance between 18 feet and 24 feet from the muzzle of the firearm used to produce the distance test patterns. Distance test patterns were provided as digital images with scale by CTS at 3-foot intervals from 3 feet to 30 feet.
P4LJAC-5307	we strongly support that the shooting range, between the muzzle of the shotgun and the target, is between 12 feet and 30 feet.
PL7AAC-5306	The shooting distance from the mouth of the barrel to the target has been 15-24 feet.
R74GG7-5306	Using the recovered shotgun and ammunition*, the muzzle distance from the Item QA-02 poster was greater than 9 feet and less than 24 feet at the time of firing.
R8GRUD-5306	[No Conclusions Reported.]
RBG3PD-5307	The cluster of holes on item 24-5307-Q was visually examined and found to be made by the shotgun pellets while the item 24-5307-Q was at approximate distance between 15-24 feet from the muzzle of shotgun at the time of firing.
RQV9ZC-5306	The distance range between the muzzle of the shotgun and the target was between 15 feet to 27 feet.
RXUYDZ-5306	On examination of the questioned shotgun pattern and having conducted range determination tests utilising the supplied Blue Line 12 gauge shotgun and discharging Sellier & Bellot 12 gauge 2-3/4" 00 Buck Shot 9 pellet ammunition in test, the distance from the muzzle of the shotgun to the target at the time of discharge has been established in this by this laboratory to be, 15 Feet to 21 Feet [18 Feet]
TMN9F7-5306	After test firing the exhibit shotgun at known distances from a range of 3 to 30 feet at 3 feet intervals, it is my opinion that the exhibit pattern occurred at a range of between 12 and 24 feet.
TVK639-5306	A visual pattern recognition comparison was performed on the known shotgun distance standards from 3' to 30' and the questioned shotgun pattern. The distance that the muzzle of the shotgun pattern marked #2 could have been made at the time of discharge was greater than 12 feet and less than 27 feet.
U93F44-5306	After test firing the exhibit shotgun and ammunition at known distances from a range of 3 to 30 feet at 3 feet intervals, it is my opinion that the exhibit pattern occurred at a range of between 15 and 24 feet.
VU3V37-5306	A shot pellet pattern is present in the Item 1.1 photograph. Based on the Items 1.2 through 1.11 photographs of test fired shot pellet patterns, the shot pellet pattern from Item 1.1 was fired at a distance greater than 12 feet but less than 24 feet.
W3R7P8-5306	I analyzed the recovered questioned shotgun pattern with the known distance standards. I determined that the muzzle of the shotgun to the target at the time of discharge is consistent with a distance range of eighteen (18) feet to twenty-four (24) feet.
W9THL4-5306	A visual pattern recognition comparison was performed on the shotgun distance standards from 3' to 30' and the distance range that the muzzle of the shotgun could have been from the target at the time



TABLE 2

WebCode- Test	Conclusions
	of discharge was greater than 12 feet and less than 27 feet.
XEZ3A2- 5306	Based on the results of the of shots fired at known distances, it is my opinion, that the muzzle of the shotgun was unlikely to have been closer than 15 feet or further than 27 feet from the target at the time this shot was fired.
XG7QM6- 5306	[No Conclusions Reported.]
YCPNFZ- 5306	In my opinion, the shotgun range depicted in the sample 'Questioned Shotgun Pattern Shotgun Distance Determination 24-5306', was found to be between the distances of 15 feet and 24 feet muzzle to target.
YGLA83- 5307	The provided Known Standards were designated Item 1. The provided Questioned shotgun pattern was designated Item 2. Examination of Item 2 revealed the presence of a pellet pattern. The pellet pattern found on Item 2 is consistent in size and density with having been produced at an approximate distance between 12 feet and 24 feet from the muzzle of the firearm that fired the Item 1 known standards.
YKHVY7- 5306	In my opinion the shot was fired between 12 and 27 feet.
YYG3R2- 5307	Item 1.1 is a photograph of a questioned shotgun pattern. Item 1.2 consists of photographs of known shotgun patterns from three feet to thirty feet. Using the provided known distance standards (Item 1.2) and visually comparing them to the questioned pattern (Item 1.1), the questioned pattern was reproduced at a distance greater than twelve feet and less than thirty feet.
Z8RLP6- 5307	The shot pellet pattern found on Q1 is consistent in size and density with the muzzle of the suspect shotgun having been greater than approximately 15 feet and less than approximately 21 feet from Q1 at the time of firing.

# Additional Comments

## TABLE 3

WebCode-Test	Additional Comments
7E7F8U-5306	It would have been helpful to have all the target patterns and the Q provided in TI FF format.
DFXMRT-5306	We could narrow the range of values with more shooting tests
E8NK7R-5306	The data provided was helpful, but not enough to give a conclusion with a small number of error rate of at least $\pm 3$ feet, as we did not do shooting test of the firearm at different distances.
F8VGQM-5306	If our laboratory made the known distance standards, the conclusion would also include the following (or similar) verbiage: "when using the Item XX firearm in combination with the Item YY unfired ammunition". The above conclusion is according to the submitted CTS knowns (Item 2) and not a general conclusion for all shotguns. Also, due to shot to shot variation in the known standards and additional images, this distance bracket is larger than normal. The 6' and 9' physical known standards when compared to the additional images and normal casework patterns, were clearly mislabeled as one another. This brought doubt into the other physical known standards, as some of them were not consistent with the additional images, which also contributed to the larger than normal distance bracket.
FXUUYQ-5306	Being compatible with 18 feet
JQGCTK-5306	Due to our internal policies, an upper bracket could not be established, which is why the term "beyond" 30 feet is used in the conclusion. However, in understanding that for the purposes of this test an upper bracket for the range is to be chosen. The furthest distance of 30 feet is the chosen upper limit/bracket for the range established.
LTWH6D-5306	important to note the similar characteristics associated with the K6' test targets "b" and "c" in comparison to the K9' test target "a", and vice versa, the similarities in the K9' test target "b" and "c" in comparison to the K6' test target "a". To be considered here is potentially an inconsistent spread anomaly in pellets at 6 feet, with another separate inconsistent spread anomaly at 9 feet, where the 9 feet "a - anomaly" looks more consistent with a test fired at six feet and conversely the 6 feet "a - anomaly" looks more consistent with a test fired at nine feet. Alternatively, the test targets were mixed up/incorrectly marked in the initial phases of shooting/collecting and/or marking by the test provider, this scenario however is of more concern since multiple other tests shots at various distances are involved
MU9EBH-5307	Comparisons of patterns were conducted via on-screen visual examinations only.
R74GG7-5306	*The recovered firearm is a Blue Line Pump 12 gauge shotgun and the ammunition is 12 gauge, 2 3/4 inch, Sellier & Bellot 00 Buck (see Attribution).
RXUYDZ-5306	This laboratory is obliged as part of our ISO 17025 accreditation to report in bracketed format as above. This indicates to the Investigating Team that the distance is definitively between 15' and 21' and most probably nearest 18 Feet.
VU3V37-5306	Since there were multiple test patterns fired at each distance, I think it would have been helpful to print out and include the test fire patterns that more readily showed the nine different shot pellets. Some of the printed photographs had less than nine visible pellet holes with no clear signs of multiple pellets in the same hole, while the digital photographs at the same distances more clearly showed the nine different pellets. This would have made the density evaluation easier since I was not able to get the digital images to print.

TABLE 3

<b>WebCode- Test</b>	<b>Additional Comments</b>
XEZ3A2- 5306	The digital set of photos were difficult to use as we are unable to print that large and it also required a lot of time to get them in a format where they could be used. Having all the test shots provided in physical form would replicate casework better and would also save time.

-End of Report-  
(Appendix may follow)

## Test No. 24-5306: Shotgun Distance Determination

DATA MUST BE SUBMITTED BY **Dec. 02, 2024, 11:59 p.m. EST** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A

WebCode: A986M7

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

### **Scenario:**

Police recovered a questioned shotgun pattern, along with a Blue Line Pump 12 gauge shotgun and Sellier & Bellot 12 gauge 2-3/4" 00 Buck Shot 9 pellet ammunition from an apprehended suspect. Investigators are asking you to compare the recovered questioned shotgun pattern with the known distance standards provided to determine the distance range that the muzzle of the shotgun could have been from the target at the time of discharge.

*Please note the following:*

*-The distance determination for this test should be reported by pattern recognition only. Chemical processing cannot be performed, as the questioned shotgun pattern is a printed image.*

*-CTS provides a digital download supplemental for the Shotgun Distance Determination test series. The supplemental contains two additional consecutive shots per known distance standard (3b, 3c through 30b, 30c), accessible through a link on the CTS Portal data entry form (see below). While the photo packet contains all materials necessary to complete the test as presented, the supplemental images are intended to bolster participant confidence in their conclusions.*

*-For the supplemental images, you are not limited to conducting only on-screen comparisons and may employ any other method you wish. However, because of differences in printing technology, CTS cannot guarantee the quality of images you print from the digital media.*

### **Items Submitted (Sample Pack SDDP - Photographs):**

Known Standards: 3' to 30'.

Questioned: Questioned shotgun pattern

To verify a complete and accurate download, the hash value for the downloaded .ZIP file is as follows:

24-5306.7\_ShotgunDD\_Supplemental.zip MD5 hash value: 15fb44bab0691ed5c73923c102990b21

24-5306.7\_ShotgunDD\_Supplemental.zip SHA1 hash value: fd5597249da8341cd0573a07f24ff8867976f8d8

**1.) What is the distance range that the muzzle of the shotgun could have been from the questioned target at the time of discharge? Please report a numeral response (e.g. "3") for the supplied distance standards.**

Greater than  (feet) and Less than  (feet)

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

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

**3.) Additional Comments**

Test 24-5306 includes printed photographs of the known and questioned distance shot patterns as well as a digital supplemental file of two consecutive shot patterns at each known distance, and starting in 2024, CTS also began offering a fully digital version of the test (24-5307) where all materials are released digitally. As part of CTS' commitment to use client feedback to ensure that our testing is relevant and meaningful to all participants, we ask that you complete the following optional survey about the digital images and test offering.

### Optional Survey

1: Did you reference the digital supplemental during your examination? If so, were they useful to your analysis?

2: The digital supplemental consists of 300dpi images saved as uncompressed .tiff files. Is your laboratory able to utilize images in this format? If not, what is your preferred format?

3: Does your laboratory require printed versions for testing?

4: What reason, if any, would you have for not switching to a digital version of testing?

## RELEASE OF DATA TO ACCREDITATION BODIES

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

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

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

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

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

ANAB Certificate No.

A2LA Certificate No.

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

Authorized Contact Person and Title

Laboratory Name

Location (City/State)