Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

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

Paint Analysis
Test No. 25-5452 Summary Report

Each participant received a sample pack containing one known paint chip sample (Item 1) and two sets of questioned paint chips (Items 2 and 3), which they were asked to examine using their existing protocols. Data were returned from 58 participants and are compiled into the following tables:

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

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

Manufacturer's Information

Each sample pack contained known paint chip sample(s) and questioned paint chip sample(s). Participants were asked to examine the questioned paint chip sample(s) and determine if it could have originated from the known paint chip(s).

SAMPLE PREPARATION: The substrate panels used for this test were inspected for defects, and the areas containing defects were not used. Association items were selected at the same time and within close spatial proximity to one another prior to item packaging and maintained together as association batches during sample pack assembly.

KNOWN ITEMS: One paint chip sample, approximately ½" x ½" in size, was selected and deposited into a glassine bag and then placed into a pre-labeled item envelope and sealed.

QUESTIONED ITEMS: Two paint chip samplings, approximately ¼" x ¼" in size, were selected and deposited into a glassine bag and then placed into a pre-labeled item envelope and sealed.

SAMPLE PACK ASSEMBLY: All items were placed into a pre-labeled sample pack envelope and sealed. This process was repeated until all of the sample packs were prepared.

VERIFICATION: Predistribution results were consistent with each other and the manufacturer's preparation information. The following procedures were used to examine the items: Stereomicroscopy, Polarized Light Microscopy, FTIR, SEM/EDX, Pyrolysis GC, and Solubility/Chemical Examination.

Item	Known/ Questioned	Association/ Elimination	Substrate	Primer	Color
1	Known	---	Drywall	Kilz All-Purpose 2 Multi-Surface, Water-Based	Glidden® Premium Interior Eggshell - Dark Green
2	Questioned	Association	Drywall	Kilz All-Purpose 2 Multi-Surface, Water-Based	Glidden® Premium Interior Eggshell - Dark Green
3	Questioned	Association	Drywall	Kilz All-Purpose 2 Multi-Surface, Water-Based	Glidden® Premium Interior Eggshell - Dark Green

Summary Comments

This test was designed to allow participants to assess their proficiency in the examination, comparison, and interpretation of multi-layered architectural paint samples. Participants were supplied with one known paint chip sample (Item 1) and two sets of questioned paint chips (Items 2 and 3). Items 2 and 3 were prepared from the same source of painted drywall panel. Refer to the Manufacturer's Information for preparation details.

Among the 58 responding participants, 53 (91%) associated both Items 2 and 3 as having originated from the Item 1 known paint sample. Of the remaining five participants, four either eliminated or reported inconclusive for both Items 2 and 3, and the remaining participant identified Item 2 and eliminated Item 3 as having originated from the Item 1 known paint sample.

The most commonly reported examination procedures included: Stereomicroscopy (98%), FTIR (97%), and SEM/EDX (59%).

Examination Results

Could the questioned recovered paint chips (Items 2 and 3) have originated from the damaged area of the wall as represented by Item 1?

TABLE 1

	Item 1			Item 1	
WebCode	Item 2	Item 3	WebCode	Item 2	Item 3
27FY72	Yes	Yes	HGFJZ6	Yes	Yes
4GTTGL	Yes	Yes	HZWEY7	Yes	Yes
4P3GUK	Yes	Yes	JJ3974	Yes	Yes
4YA4ZY	Yes	Yes	K6H9N3	Yes	Yes
4YNNP3	Yes	Yes	KNWPV3	Yes	Yes
4ZHGHZ	Yes	Yes	KXHT32	Yes	Yes
6PKT9J	Yes	Yes	L6ET9G	Yes	Yes
6PY2EX	Yes	Yes	MDM2V2	Yes	Yes
7F86NG	Yes	Yes	MK3PNG	Yes	Yes
7XMC3Y	Yes	Yes	MTJYFK	Yes	Yes
84RTTX	Yes	Yes	MV3BW2	Yes	Yes
9FGRFU	Yes	No	MVPGG2	Yes	Yes
9YRJHW	Yes	Yes	P4QPQX	Yes	Yes
A7RFME	Yes	Yes	PYWU6D	Yes	Yes
AK7Q7V	Yes	Yes	Q7G8PX	Yes	Yes
AN8PNE	Yes	Yes	QBKFND	Yes	Yes
DNHTNB	Yes	Yes	QP6WEW	Yes	Yes
EEP2F9	Yes	Yes	QRBDUE	Yes	Yes
FMGJNP	Yes	Yes	RD88GV	Yes	Yes
FW3NVP	No	No	T4YWPW	Yes	Yes
GALPQM	Yes	Yes	TFNXZB	Yes	Yes
GBH9TN	No	No	VMNU6T	Yes	Yes
GEYQU6	Yes	Yes	VTPB98	Yes	Yes
GJVCL9	Yes	Yes	W8MKR8	Inc	Inc
GR7E89	Yes	Yes	WHN9NB	Yes	Yes
GUENY7	Yes	Yes	WQHBUT	Yes	Yes

TABLE 1

WebCode	Item 1 Item 2	Item 1 Item 3	WebCode	Item 1 Item 2	Item 1 Item 3
XGNKMQ	Yes	Yes			
Y6PDZ7	No	No			
Y6UQPM	Yes	Yes			
ZKZCQN	Yes	Yes			
ZLVWB3	Yes	Yes			
ZPV983	Yes	Yes			

Examination Response Summary **Participants: 58**

Could the questioned recovered paint chips (Items 2 and 3) have originated from the damaged area of the wall as represented by Item 1?

	Item 2	Item 3
Yes:	**54** *(93.1%)*	**53** *(91.4%)*
No:	**3** *(5.2%)*	**4** *(6.9%)*
Inc:	**1** *(1.7%)*	**1** *(1.7%)*

Examination Procedures

TABLE 2

WebCode	Stereomicroscope	Polarized Light	Fluorescence	Pyrolysis GC	FTIR	Solubility / Chemical	Microspectrophotometry	XRF / XRS	SEM / EDX	Other
27FY72	✓		✓		✓			✓		Raman (532, 638 and 785 nm)
4GTTGL	✓			✓	✓		✓		✓	
4P3GUK	✓				✓				✓	
4YA4ZY	✓				✓					
4YNNP3	✓	✓		✓	✓	✓			✓	
4ZHGHZ	✓			✓	✓				✓	Raman spectroscopy
6PKT9J	✓			✓	✓					RAMAN
6PY2EX	✓		✓		✓					
7F86NG	✓				✓	✓				
7XMC3Y	✓				✓				✓	
84RTTX	✓				✓				✓	
9FGRFU	✓					✓				
9YRJHW	✓		✓		✓		✓			Toolscan
A7RFME	✓				✓					Raman spectroscopy
AK7Q7V	✓				✓	✓				
AN8PNE	✓				✓			✓		
DNHTNB	✓	✓	✓		✓				✓	
EEP2F9	✓	✓			✓		✓		✓	
FMGJNP	✓	✓	✓		✓				✓	
FW3NVP					✓				✓	
GALPQM	✓				✓					
GBH9TN	✓				✓					

TABLE 2

WebCode	Stereomicroscope	Polarized Light	Fluorescence	Pyrolysis GC	FTIR	Solubility / Chemical	Microspectrophotometry	XRF / XRS	SEM / EDX	Other
GEYQU6	✓	✓			✓		✓		✓	
GJVCL9	✓	✓	✓		✓					
GR7E89	✓				✓				✓	
GUENY7	✓	✓	✓	✓	✓	✓				
HGFJZ6	✓		✓		✓				✓	
HZWEY7	✓	✓	✓		✓		✓	✓	✓	Raman, LA-ICP-MS, LIBS
JJ3974	✓	✓	✓		✓	✓			✓	Comparison microscopy
K6H9N3	✓				✓			✓	✓	
KNWPV3	✓		✓		✓	✓			✓	
KXHT32	✓	✓	✓	✓	✓				✓	
L6ET9G	✓				✓					
MDM2V2	✓			✓	✓			✓	✓	
MK3PNG	✓	✓	✓		✓	✓			✓	
MTJYFK	✓	✓	✓	✓	✓				✓	
MV3BW2	✓			✓	✓				✓	
MVPGG2	✓	✓	✓		✓			✓		
P4QPQX	✓				✓	✓				
PYWU6D	✓		✓	✓	✓			✓		
Q7G8PX	✓				✓			✓	✓	
QBKFND	✓			✓	✓				✓	
QP6WEW	✓				✓	✓				
QRBDUE	✓		✓	✓	✓		✓		✓	
RD88GV	✓		✓		✓					Microtomy

TABLE 2

WebCode	Stereomicroscope	Polarized Light	Fluorescence	Pyrolysis GC	FTIR	Solubility / Chemical	Microspectrophotometry	XRF / XRS	SEM / EDX	Other
T4YWPW	✓				✓				✓	
TFNXZB	✓	✓	✓		✓	✓		✓	✓	
VMNU6T	✓				✓			✓	✓	
VTPB98	✓				✓					
W8MKR8	✓		✓							
WHN9NB	✓	✓			✓	✓			✓	Pyrolysis GC/MS
WQHBUT	✓			✓	✓		✓		✓	
XGNKMQ	✓		✓		✓				✓	Raman
Y6PDZ7	✓				✓					Raman (785 nm)
Y6UQPM	✓				✓				✓	Cross-section
ZKZCQN	✓				✓				✓	
ZLVWB3	✓				✓	✓				
ZPV983	✓			✓	✓				✓	

Response Summary **Participants: 58**

	Stereomicroscope	Polarized Light	Fluorescence	Pyrolysis GC	FTIR	Solubility/ Chemical	Microspectrophotometry	XRF/XRS	SEM/EDX
Total	57	15	21	14	56	13	7	10	34
Percent	*98%*	*26%*	*36%*	*24%*	*97%*	*22%*	*12%*	*17%*	*59%*

Conclusions

TABLE 3

WebCode	Conclusions
27FY72	A visual inspection of the samples Item 1, Item 2 and Item 3 revealed no discernible differences between them, either in the colour of the individual layers or in the overall position and number of layers in the paint chips. These findings were further supported through use of analytical techniques, namely FT-IR, Raman and XRF, which indicated that the questioned recovered paint chips (Item 2 and Item 3) could have originated from the damaged area of the wall as represented by Item 1.
4GTTGL	Item1, item2 and item3 are all the same type of paint. FTIR, MSP, Pyro-GC/MS and SEM-EDX analyses were conducted, and all analyses showed that item1, item2 and item3 produced similar results.
4P3GUK	The three items had two paint layers, a green top layer and a white layer. The green layers were indistinguishable by IR and SEM/EDX. The white layers were similar to each other by IR and SEM/EDX. The variations in trace level ratios were not significant and are likely due to sample heterogeneity. Items 2 and 3 both could have originated from Item 1.
4YA4ZY	1) The know paint sample representative of the damaged area of the wall (item 1), the questioned recovered paint chips recovered (item 2 and 3), consist to two layers paint system with the following layer structure: 1. green polivinilacetate-acrylic with calcium carbonate (calcite) and 2. white acrylic latex with calcium carbonate (calcite). 2) The two layered paint chips in items 1, 2 and 3 matches in all properties investigated, particulary in colors, textures, types, layer sequence and chemical composition. This indicates that both signs could share a common origin (see additional comments).
4YNNP3	CONCLUSIONS: The questioned paint chips (items 2 and 3) are the same distinct type of paint as the known paint on the damaged area of the wall (item 1) and originated either from that source or another source of architectural paint having the same distinct characteristics. RESULTS: Questioned paint chips (items 2 and 3) were examined for the purpose of determining whether or not there is any paint present like that on the damaged area of the wall (item 1). The paint standard from the damaged area of the wall (item 1) has the following layer structure: 1. Dark green polyvinyl acetate(PVA)-acrylic latex enamel topcoat 2. White acrylic latex enamel undercoat This paint exhibits characteristics typical of an architectural finish and was used for comparison with the questioned paint chips (items 2 and 3). The questioned paint chips (items 2 and 3) have the same layer structure as the damaged area of the wall (item 1). Examination and comparison of the questioned paint chips (items 2 and 3) with item 1 revealed they are alike with respect to layer structure, layer colors, layer textures, microchemical reactivities, binder characteristics, and pigment characteristics. It is therefore concluded that the questioned paint chips (items 2 and 3) are the same distinct type of paint as the known paint on the damaged area of the wall (item 1) and originated either from that source or another source of architectural paint having the same distinct characteristics. METHODS OF ANALYSIS: Examinations were performed visually, by stereo microscopy, brightfield/polarized light comparison microscopy, microchemical tests, Fourier transform infrared microspectroscopy, pyrolysis gas chromatography, and scanning electron microscopy/energy dispersive x-ray analysis.
4ZHGHZ	Physical examinations indicated that Items 1 through 3 are indistinguishable from one another. Chemical analysis of Items 1 through 3 revealed no exclusionary differences in the properties examined. Therefore, Items 2 and 3 originated from the wall represented by Item 1 or from another source painted in the same manner (Type III Association- see Interpretation below). This conclusion was reached because paint is mass produced and other surfaces containing the same paint layers applied in the same manner would also be indistinguishable. Interpretation: The following categories and their descriptions are meant to provide context to

TABLE 3

WebCode	Conclusions
	the conclusions reached in this report. Every category may not be applicable in every case nor for every material. Type I Association: Physical Fit – The items exhibit physical features that demonstrate they were once part of the same object. Associations of Evidence with Class Characteristics: Class characteristics are physical and/or chemical properties that place an item within a particular group of items. Associations of evidence with class characteristics can have varying degrees of significance. In general, the smaller the size of the group relative to the relevant population, the more significant the association. A class association cannot definitively establish that the items came from the same source. Type II: Association with Highly Discriminating Characteristics – An association in which items could not be differentiated. Therefore, the possibility that the items came from the same source cannot be eliminated. Additionally, the items share unusual characteristics that would not be expected to be encountered in the relevant population. Type III: Association with Discriminating Characteristics – An association in which items could not be differentiated. Therefore, the possibility that the items came from the same source cannot be eliminated. Other items have been manufactured that would also be indistinguishable from the submitted items and could be encountered in the relevant population. Type IV: Association with Limitations – An association in which items could not be differentiated. Therefore, the possibility that the items came from the same source cannot be eliminated. As compared to the categories above, this type of association has decreased evidential value. For example, the items are more commonly encountered in the relevant population, a complete analysis was not performed due to limited characteristics or a limited analytical scheme, or minor variations were observed in the data. Inconclusive – No conclusion could be reached. Elimination – The items exhibit exclusionary differences that demonstrate they did not originate from the same source.
6PKT9J	The questioned paint chips recovered from the suspect (items 2 and 3) and the known paint sample representative of the damaged area of the wall (item 1) were consistent on color, layering and chemical composition and could have originated from the same source.
6PY2EX	In my opinion, the findings provide strong support for the view that the recovered paint samples (items 2 & 3) have originated from the damaged wall in question as represented by item 1.
7F86NG	On analysis, I found that both questioned paint chips "ITEM 2" and "ITEM 3" were similar to the known paint chip sample "ITEM 1". Hence, I am of the opinion that both questioned paint chips "ITEM 2" and "ITEM 3" might have come from the same source as known paint chip sample "ITEM 1".
7XMC3Y	[No Conclusions Reported.]
84RTTX	Based on microscopic, FT-IR, and SEM-EDS analyses of Items 1, 2, and 3, the coloration, morphology, and chemical composition of Items 2 and 3 were found to be consistent with those of Item 1. Accordingly, Items 2 and 3 were assessed to have potentially originated from Item 1.
9FGRFU	Item 2 (the questioned paint chip recovered) may have a common origin with item 1 (known paint sample representative of the damaged area of the wall. Item 3 (the questioned paint chip recovered) did not have a common origin with item 1 (known paint sample representative of the damaged area of the wall.
9YRJHW	The questioned recovered paint chips (Items 2 and 3) were found to be consistent in layer structure, UV reaction, surface texture, coating thickness, colour and chemical composition to those of the known paint sample representative of the damaged area of wall A (Item 1). Based on the above findings, in my opinion, both Items 2 and 3 could have originated from Item 1.
A7RFME	Considering the number and colour of the layers, no significant visual differences were observed between Items 1, 2 and 3. The analysis performed by FTIR and Raman spectroscopy determined that the three samples are indistinguishable with the techniques used. Therefore,

TABLE 3

WebCode	Conclusions
	Items 1, 2 and 3 could have the same origin.
AK7Q7V	On analysis, I found: i) Questioned recovered paint chip Item 2 to be similar to the known paint sample representative of the damaged area of the wall (Item 1). ii) Questioned recovered paint chip Item 3 to be similar to the known paint sample representative of the damaged area of the wall (Item 1). Based on the findings, I am of the opinion that: i) Questioned recovered paint chip Item 2 could have originated from the damaged area of the wall as represented by Item 1. ii) Questioned recovered paint chip Item 3 could have originated from the damaged area of the wall as represented by Item 1.
AN8PNE	It was determined utilizing stereomicroscopic, Fourier Transform Infrared Spectroscopy, and X-Ray Fluorescence Spectroscopy that the flat dark green colored paint layer and white primer paint layer samples from item 2 and item 3 and flat dark green paint layer and white primer paint layer samples from item 1 exhibit consistent characteristics. Therefore, the two questioned paint samples item 2 and item 3, cannot be eliminated as having originated from the known paint sample item 1.
DNHTNB	The green architectural paint sample labeled "questioned recovered paint chips", (item 2), is consistent in color, layer sequence, physical characteristics, chemical composition, and elemental composition as compared to the green architectural paint sample labeled "known paint sample representative of the damaged area of the wall", (item 1). Level III Association. The green architectural paint sample labeled "questioned recovered paint chips", (item 3), is consistent in color, layer sequence, physical characteristics, chemical composition, and elemental composition as compared to the green architectural paint sample labeled "known paint sample representative of the damaged area of the wall", (item 1). Level III Association.
EEP2F9	The questioned samples (Items 2 and 3) could have originated from the known sample (Item 1 as represented by the submitted exemplar), or another item exhibiting all of the same analyzed/measured characteristics.
FMGJNP	The results of the examination support that the examined paint chips, in Item 2 and Item 3, originates from the damaged area of the wall, from which Item 1 is collected (Level +2).
FW3NVP	Based on FTIR analysis of the top layer of paint of all three items, both Items 2 and Item 3 (questioned paint chips recovered from the crime scene) can be excluded as having originated from Item 1 (damaged are of the wall). In addition, imaging by SEM revealed that the texture of the layers present in items 1, 2 and 3 were comparable, however EDS analysis of the top layers in items 2 and 3 were different to the top layer of item 1, due to the presence of Sr barite in items 2 and 3, while item 1 contained barite. Therefore, it was concluded that both items 2 and 3 (paint chips recovered from the crime scene) can be excluded from having originated from item 1 (damaged area of the wall).
GALPQM	The paint samples, Exhibits 2 and 3, originated either from the source of the paint sample, Exhibit 1, or from another source of paint with indistinguishable physical characteristics and chemical composition.
GBH9TN	ITEM 2 COULD NOT HAVE ORIGINATED FROM ITEM 1 ITEM 3 COULD NOT HAVE ORIGINATED FROM ITEM 1
GEYQU6	Known paint sample from Item 1 was compared to questioned paint samples from Items 2 and 3. The paint samples from Items 2 and 3 were found to be indistinguishable from known paint sample from Item 1 in layer structure, color, and chemical composition. Items 2 and 3 could have originated from the same source as Item 1 or any other source exhibiting similar analyzed characteristics.
GJVCL9	In my opinion, the findings provide strong support from the proposition that the recovered paint chips in item 2 and item 3 have originated from the damaged wall, represented by item

TABLE 3

WebCode	Conclusions
	1.
GR7E89	The questioned recovered paint chips (item 2 and item 3) could have originated from the known paint sample (item 1).
GUENY7	Known paint sample representative of the damaged area of the wall (Item 1): This item was used for comparison purposes. Questioned recovered paint chips (Item 2): This item is comprised of two architectural paint chips. The questioned paint chips are similar in visual color to the known paint sample of the wall (Item 1). One of these paint chips was selected for further analysis and is similar in layer sequence, fluorescence, chemical solubility, paint type, and paint composition to the known paint sample of the wall (Item 1). It is our opinion that the questioned paint could have come from the painted wall or any other painted wall with similar paint characteristics. No analysis was performed on the remaining paint chip. Questioned recovered paint chips (Item 3): This item is comprised of two architectural paint chips. The questioned paint chips are similar in visual color to the known paint sample of the wall (Item 1). One of these paint chips was selected for further analysis and is similar in layer sequence, fluorescence, chemical solubility, paint type, and paint composition to the known paint sample of the wall (Item 1). It is our opinion that the questioned paint could have come from the painted wall or any other painted wall with similar paint characteristics. No analysis was performed on the remaining paint chip.
HGFJZ6	The results very strongly support the proposition that the paint from Item 1, Item 2 and Item 3 are of the same type (+3 conclusion). The results strongly support the hypothesis saying that Item 2 and 3 are of the same origin as Item 1, rather than the alternative hypothesis saying that Item 2 and 3 are of a different origin to Item 1.
HZWEY7	1.) The questioned paint chips (Item 2) could have originated from the damaged area of the wall as represented by Item 1. 2.) The questioned paint chips (Item 3) could have originated from the damaged area of the wall as represented by Item 1.
JJ3974	Item 1: A two-layer dark green paint chip was analyzed for comparison to Items 2 and 3. Item 2: Two, two-layer dark green paint chips were found. In the sample analyzed, the unknown paint (Item 2) and the standard paint (Item 1) are the same in physical (layer structure and color) and chemical (organic and elemental) characteristics. The unknown paint (Item 2) either originated from the standard (Item 1) or another source of paint possessing the same distinct physical and chemical characteristics. Item 3: Two, two-layer dark green paint chips were found. In the sample analyzed, the unknown paint (Item 3) and the standard paint (Item 1) are the same in physical (layer structure and color) and chemical (organic and elemental) characteristics. The unknown paint (Item 3) either originated from the standard (Item 1) or another source of paint possessing the same distinct physical and chemical characteristics.
K6H9N3	D1. Layer Structure Determination a. Microscopic examination of questioned paints Q1 and Q2 disclosed the following layer structures: i. Q1 – dark green coat, surface not smooth (layer 1) / white coat (layer 2) / brown fibrous material substrate / white crumbly substrate, partial, uneven ii. Q2 – dark green coat, surface not smooth (layer 1) / white coat (layer 2) / brown fibrous material substrate / white crumbly substrate, partial, uneven b. Microscopic examination of known paint K1 disclosed the following layer structure: i. K1 – dark green coat, surface not smooth (layer 1) / white coat (layer 2) / brown fibrous material substrate / white crumbly substrate, partial, uneven D2. Comparison Result a. One of the Q1 questioned paint samples (designated Q1a), one of the Q2 questioned paint samples (designated Q2a), and known paint K1 were instrumentally analyzed and Q1a and Q2a were compared to K1. Q1a and Q2a and K1 are consistent and no exclusionary differences were observed with respect to their color, texture, layer structure, chemical type, and elemental composition. b. The remaining samples from Q1 and Q2 were designated Q1b and Q2b respectively. No further

TABLE 3

WebCode	Conclusions
	analysis was performed on these samples; therefore, no conclusions can be made. E1. It is the opinion of the undersigned that questioned paints Q1a and Q2a could have originated from the same source as represented by the known submitted exemplar K1 or from another source exhibiting all of the same analyzed characteristics.
KNWPV3	Items 1, 2, and 3 were examined using stereomicroscopy, microchemical tests, fluorescence microscopy, Fourier Transform Infrared Spectrophotometry (FTIR), and Scanning Electron Microscopy-Energy Dispersive X-Ray Spectrometry (SEM-EDS). The two-layered dark green paint particles in Items 1, 2, and 3 were consistent in colors, textures, types, layer sequence, and chemical compositions. Based on the particles examined, it was concluded that the Item 2 and 3 paints had a common origin with Item 1 or another source of paint with the same colors, textures, types, layer sequence, and chemical compositions (Level II - Association with Highly Discriminating Characteristics). This type of conclusion was reached because Items 1, 2, and 3 each exhibit architectural paint systems with two layers of varying colors and chemistries. The layer structure of architectural paint is dictated by a number of factors (color choice, price, desired properties, etc.) that are unlikely, though not impossible, to be reproduced in another viable source of paint. It should be noted that the techniques used in this comparative analysis can typically distinguish architectural paint systems/layers with differing colors and/or chemistries.
KXHT32	1. Exhibits 1 (Item 1 – known paint sample representative of the damaged area of the wall), 2 (Item 2 – questioned recovered paint chips), and 3 (Item 3 – questioned recovered paint chips) were each composed of two layers of architectural paint with the following layer sequence: green top layer/white bottom layer. 2. Comparative examinations of Exhibits 2 and 3 (questioned recovered paint chips) with Exhibit 1 (known paint sample representative of the damaged area of the wall) disclosed them to be consistent with respect to their physical characteristics and chemical composition. As a result of these findings, Exhibits 2 and 3 originated from the damaged area of the wall represented by Exhibit 1 or from another source of architectural paint having the same characteristics (LEVEL 3 ASSOCIATION – Discriminating Characteristics). This type of association was reached due to the presence of two-layer architectural paint samples. Other painted items in the relevant population may share the same characteristics if the paints were manufactured and applied in the same way. APPENDIX The following categories and their descriptions are meant to provide context to the conclusions reached in this report. Every type of conclusion may not be applicable in every case nor for every material type. LEVEL 1 ASSOCIATION – Physical Fit Present This is the highest degree of association between items. The items exhibit physical characteristics along the separation boundary that realign in a manner that is not expected to be replicated. The items were once physically connected. ASSOCIATIONS OF EVIDENCE WITH CLASS CHARACTERISTICS: Class characteristics are physical and/or chemical properties that place an item within a particular group of items. Associations of evidence with class characteristics can have varying degrees of significance. In general, the smaller the size of the group relative to the relevant population, the more significant the association. A class association cannot definitively establish that items came from the same source. LEVEL 2 ASSOCIATION – Highly Discriminating Characteristics The items could not be differentiated based on the examinations conducted. Other items may have been manufactured that would also be indistinguishable from the submitted items and could be encountered in the relevant population, however, the items share specific characteristics that would not be expected to be encountered in the relevant population. LEVEL 3 ASSOCIATION – Discriminating Characteristics The items could not be differentiated based on the examinations conducted. Other items have been manufactured that would also be indistinguishable from the submitted items and could be encountered in the relevant population. LEVEL 4 ASSOCIATION – Limitations The items could not be differentiated based on the examinations conducted. The association is considered limited because of one or more

TABLE 3

WebCode	Conclusions
	of the following: the items are more commonly encountered in the relevant population; a complete analysis was not performed due to sample size or condition; or explainable variations were observed in the data. INCONCLUSIVE: No opinion could be reached regarding an association or an exclusion between the items. EXCLUSION: The items exhibit exclusionary differences that support the opinion that the items did not originate from the same source.
L6ET9G	1) The known paint sample representative of the damaged area of the wall (item 1) and the questioned recovered paint chips (item 2 and item 3) consist of a two layers paint system over drywall substrate, with the following layer structure: Item 1, item 2 and Item 3: dark green topcoat layer, polyvinyl acetate – acrylic latex with calcium carbonate; and white undercoat layer, in which an acrylic resin with calcium carbonate is detected. 2) The two layered paint samples in items 1, 2 and 3 matched in colors, textures and chemical composition. It was concluded that the paint in these items could have a common origin. The possibility that they do not share a common origin depends on whether the fragments recovered on the suspect come from another surface (building or house) that has the same type of finish (same sequence of layers, physical properties and chemical composition).
MDM2V2	Paint sample 1 exhibited color and compositional characteristics similar to samples 2 and 3, indicating that all three likely originated from the same source.
MK3PNG	The questioned paint chips recovered from the suspect (Item 2 and Item 3) could have originated from the damaged area of the wall (Item 1) or from another source of architectural paint having the same analyzed/measured characteristics. It should be noted that small differences observed in elemental composition (comparison of questioned paint chips Items 2 and 3 to known paint sample Item 1) can be explained by the inhomogeneity of such types of paints and contaminations from the drywall substrate.
MTJYFK	1. Exhibits 1 (item 1, Known paint sample representative of the damaged area of wall), 2 (item 2, Questioned recovered paint chips), and 3 (item 3, Questioned recovered paint chips) each contain samples of architectural paint with a green top layer and a white bottom layer. 2. Comparative examinations of Exhibit 2 with Exhibit 1 disclosed them to be consistent with respect to their physical characteristics and chemical composition. As a result of these findings, Exhibit 2 originated from the same wall as Exhibit 1 or from another source of architectural paint having the same characteristics (LEVEL 3 ASSOCIATION – Discriminating Characteristics). This type of association was reached because the compared items were comprised of architectural paints with a single colored layer in combination with a primer layer, which increases discrimination power and reduces the population of potential sources. 3. Comparative examinations of Exhibit 3 with Exhibit 1 disclosed them to be consistent with respect to their physical characteristics and chemical composition. As a result of these findings, Exhibit 3 originated from the same wall as Exhibit 1 or from another source of architectural paint having the same characteristics (LEVEL 3 ASSOCIATION – Discriminating Characteristics). This type of association was reached because the compared items were comprised of architectural paints with a single colored layer in combination with a primer layer, which increases discrimination power and reduces the population of potential sources. APPENDIX The following categories and their descriptions are meant to provide context to the conclusions reached in this report. Every type of conclusion may not be applicable in every case nor for every material type. LEVEL 1 ASSOCIATION – Physical Fit Present This is the highest degree of association between items. The items exhibit physical characteristics along the separation boundary that realign in a manner that is not expected to be replicated. The items were once physically connected. ASSOCIATIONS OF EVIDENCE WITH CLASS CHARACTERISTICS: Class characteristics are physical and/or chemical properties that place an item within a particular group of items. Associations of evidence with class characteristics can have varying degrees of significance. In general, the smaller the size of the group relative

TABLE 3

WebCode	Conclusions
	to the relevant population, the more significant the association. A class association cannot definitively establish that items came from the same source. LEVEL 2 ASSOCIATION – Highly Discriminating Characteristics The items could not be differentiated based on the examinations conducted. Other items may have been manufactured that would also be indistinguishable from the submitted items and could be encountered in the relevant population, however, the items share specific characteristics that would not be expected to be encountered in the relevant population. LEVEL 3 ASSOCIATION – Discriminating Characteristics The items could not be differentiated based on the examinations conducted. Other items have been manufactured that would also be indistinguishable from the submitted items and could be encountered in the relevant population. LEVEL 4 ASSOCIATION – Limitations The items could not be differentiated based on the examinations conducted. The association is considered limited because of one or more of the following: the items are more commonly encountered in the relevant population; a complete analysis was not performed due to sample size or condition; or explainable variations were observed in the data. INCONCLUSIVE: No opinion could be reached regarding an association or an exclusion between the items. EXCLUSION: The items exhibit exclusionary differences that support the opinion that the items did not originate from the same source.
MV3BW2	All three items are composed of two layers(green and white), and the components of each layer are the same.
MVPGG2	Microscopic and instrumental analyses (Fourier Transform Infrared Spectroscopy, X-ray Fluorescence) of one questioned particle each from Item #01.02 and Item #01.03, and the known paint (Item #01.01) revealed that they are consistent with regards to their color, texture, layer structure, chemical type, and elemental composition. Therefore, the analyzed particles from Item #01.02 and Item #01.03 could have originated from the known source represented by Item #01.01 or another painted source with all of the same analyzed characteristics. No conclusions are reached regarding the unanalyzed questioned particles.
P4QPQX	On analysis, I found that the questioned paint chips recovered from the crime scene (Item 2 and Item 3) were similar with the known paint representative of the damaged area of the wall (Item 1)
PYWU6D	The Questioned paint chips recovered from the crime scene (Item 2) could have been originated from the damaged wall (Item 1). The Questioned paint chips recovered from the crime scene (Item 3) could have been originated from the damaged wall (Item 1). because of the similarities of their physical properties and chemical compositions.
Q7G8PX	D) RESULTS OF EXAMINATION 1. Layer Structure Determination: a. Microscopic examination of questioned particles Q1 and Q2 disclosed the following layer structures: i. Q1 (two particles): rubbery dark green coat (Layer 1) / thick porous white coat (Layer 2) / white translucent substrate / tan wooden substrate / white crumbly substrate; layers are uneven; white debris adhering all over consistent with crumbly substrate ii. Q2 (two particles): porous and pliable dark green coat (Layer 1) / flexible white coat (Layer 2) / white translucent substrate / tan wooden substrate / white crumbly substrate; layers are uneven; white debris adhering all over consistent with crumbly substrate b. Microscopic examination of known paint K1 disclosed the following layer structure: i. K1 (one particle): porous and pliable dark green coat (Layer 1) / flexible and crumbly (around edges) white coat (Layer 2) / white translucent substrate / tan wooden substrate / white crumbly substrate; layers are uneven; white debris adhering all over consistent with crumbly substrate 2. Comparison Result: a. One particle each was selected from Q1 and Q2 for instrumental analysis. These particles were designated Q1a and Q2a, respectively. b. Questioned particles Q1a and Q2a and known paint K1 are consistent and no exclusionary differences were observed with respect to their color, texture, layer structure, chemical type, and elemental composition. c. The remaining particles from Q1

TABLE 3

WebCode	Conclusions
	and Q2 were designated Q1b and Q2b, respectively. No further analysis was performed on these particles, therefore no conclusions can be made. E) INTERPRETATION OF RESULTS 1. It is the opinion of the undersigned that questioned particles Q1a and Q2a could have originated from the same source as represented by the known submitted exemplar K1 or from another source exhibiting all of the same analyzed characteristics.
QBKFND	Results of Examinations: The Item 2 and Item 3 questioned paint chips recovered from the suspect were examined and compared to the Item 1 known paint from the damaged area of the wall. All were observed to contain two layers of paint (green over white). Based on the examinations conducted, these layers of paint in Item 2 could not be distinguished in sequence, color, texture, and chemical composition to the corresponding layers of paint in Item 1. Accordingly, Item 2 originated from the same source as Item 1 or from different sources painted in the same manner (Type III Association – see Interpretation section). This type of association was reached because other surfaces painted with the same colors and formulations in the same sequence would also be indistinguishable. Based on the examinations conducted, these layers of paint in Item 3 also could not be distinguished in sequence, color, texture, and chemical composition to the corresponding layers of paint in Item 1. Accordingly, Item 3 originated from the same source as Item 1 or from different sources painted in the same manner (Type III Association – see Interpretation section). This type of association was reached because other surfaces painted with the same colors and formulations in the same sequence would also be indistinguishable. The following analytical techniques were used in the examination of these items: visual and stereomicroscopical examinations, Fourier transform infrared spectroscopy, scanning electron microscopy with backscattered electron imaging and energy dispersive X-ray spectroscopy, and pyrolysis-gas chromatography/mass spectrometry. Interpretation: The following categories and their descriptions are meant to provide context to the conclusions reached in this report. Every category may not be applicable in every case nor for every material. Type I Association: Physical Fit – The items exhibit physical features that demonstrate they were once part of the same object. Associations of Evidence with Class Characteristics: Class characteristics are physical and/or chemical properties that place an item within a particular group of items. Associations of evidence with class characteristics can have varying degrees of significance. In general, the smaller the size of the group relative to the relevant population, the more significant the association. A class association cannot definitively establish that the items came from the same source. Type II: Association with Highly Discriminating Characteristics – An association in which items could not be differentiated. Therefore, the possibility that the items came from the same source cannot be eliminated. Additionally, the items share unusual characteristics that would not be expected to be encountered in the relevant population. Type III: Association with Discriminating Characteristics – An association in which items could not be differentiated. Therefore, the possibility that the items came from the same source cannot be eliminated. Other items have been manufactured that would also be indistinguishable from the submitted items and could be encountered in the relevant population. Type IV: Association with Limitations – An association in which items could not be differentiated. Therefore, the possibility that the items came from the same source cannot be eliminated. As compared to the categories above, this type of association has decreased evidential value. For example, the items are more commonly encountered in the relevant population, a complete analysis was not performed due to limited characteristics or a limited analytical scheme, or minor variations were observed in the data. Inconclusive – No conclusion could be reached. Elimination – The items exhibit exclusionary differences that demonstrate they did not originate from the same source.
QP6WEW	After analysis, (i) known paint sample "Item 1" is similar to question recovered paint chips "Item 2", (ii) known paint sample "Item 1" is dissimilar to question revocered paint chips "Item 3".

TABLE 3

WebCode	Conclusions
QRBDUE	1. The paint chips (items 2 and 3) recovered from the suspect were compared to the damaged area of the shop wall (item 1), they were found to be indistinguishable from each other in regards to physical, chemical and elemental properties. 2. I have considered the following propositions to evaluate my findings: a. The paint chips (items 2 and 3) recovered from the suspect originated from the damaged area of the shop wall (item 1). b. The paint chips (items 2 and 3) recovered from the suspect originated from an unrelated source and are present due to chance. 3. Given the above, I consider the findings to be more probable if the first proposition is true in regards to the paint chips (item 2 and 3) recovered from the Suspect, that is, the paint chips recovered from the suspect originated from the damaged area of the shop wall (item 1) rather than the second that the paint chips were present by chance. 4. The findings provide moderate support for the proposition that the paint chips (items 2 and 3) recovered from the suspect originated from the damaged area of the wall (item 1).
RD88GV	The known paint sample (item 1) from the damaged area of the wall, was a green architectural paint with the following layer sequence; green/white. The recovered paint sample (item 2) from the suspect, was a green architectural paint with the following layer sequence; green/white, which matched in microscopic appearance and layer sequence the known paint from the damaged area of the wall (item 1). The chemical composition of the corresponding green and white layers also matched. The recovered paint sample (item 3) from the suspect, was a green architectural paint with the following layer sequence; green/white, which matched in microscopic appearance and layer sequence the known paint from the damaged area of the wall (item 1). The chemical composition of the corresponding green and white layers also matched. Recovered paint from the suspect (item 2 and item 3) matches the known paint from the damaged area of the wall (item 1), therefore could have originated from the wall. In casework, I would evaluate my findings based on the following two propositions; Hp - The recovered paint chips from the suspect (item 2 and item 3) came from the damaged area of the wall. Hd - The recovered paint chips from the suspect (item 2 and item 3) came from a different source. The findings of recovered paint from the suspect (item 2 and item 3) matching the known paint from the damaged area of the wall (item 1) is expected if the recovered paint from the suspect (item 2 and item 3) came from the wall. There is a low expectation of these findings if the recovered paint chips came from a different source. The above findings provide strong support for the view that the recovered paint chips from the suspect (item 2 and 3) came from the wall, rather than from a different source. I have chosen the above phrase from the following scale: weak support, moderate support, moderately strong support, strong support, very strong support, extremely strong support. My evaluation of the findings is based on my understanding of the circumstances as outlined earlier. If these are different please inform me as re-evaluation of my findings will be necessary.
T4YWPW	Item 1, 2 and 3 consist of two layers (dark green and white), and they are identical in appearance and composition. Thus, Items 2 and 3 originated from Item 1
TFNXZB	A comprehensive analysis was conducted to compare two unknown paint samples (ITEM 2, ITEM 3) against a known reference sample (ITEM 1). Microscopic examination revealed that the unknowns were analogous to the known sample in color, surface morphology, and fluorescence response. Cross-sectional micrographs showed a uniform drywall/paint layer structure identical to that of ITEM 1. This physical match was corroborated by chemical analysis. X-ray fluorescence (XRF) spectra from ITEMS 2 and 3 were comparable to ITEM 1, indicating a shared elemental makeup. Likewise, Fourier transform infrared (FTIR) spectra for the unknowns were highly correlated to the known reference between 4000-700 cm^{-1}. Finally, all three samples proved to be insoluble in ethanol. These combined findings support the conclusion that ITEM 2 and ITEM 3 are indistinguishable from the known sample, ITEM 1.
VMNU6T	RESULTS OF EXAMINATION: 1. Layer Structure Determination: a. Microscopic examination of

TABLE 3

WebCode	Conclusions
	known paint K disclosed the following layer structure: i. K – slightly pliable dark green coat (layer 1) / slightly pliable white coat (layer 2) / tan wood substrate / white substrate with a chalky texture b. Microscopic examination of questioned paints Q1 and Q2 disclosed the following layer structures: i. Q1 (two pieces) – slightly pliable dark green coat (layer 1) / slightly pliable white coat (layer 2) / tan wood substrate / white substrate with a chalky texture ii. Q2 (two pieces) – slightly pliable dark green coat (layer 1) / slightly pliable white coat (layer 2) / tan wood substrate / white substrate with a chalky texture 2. Comparison Result: a. One of the Q1 questioned paint samples (designated as Q1a) and one of the Q2 questioned paint samples (designated as Q2a) were instrumentally analyzed and compared to the known paint K. Questioned paints Q1a and Q2a, and the known paint K are consistent, and no exclusionary differences were observed with respect to their color, texture, layer structure, chemical type, and elemental composition. b. The remaining questioned paint samples from Q1 and Q2 were designated Q1b and Q2b, respectively. No further analysis was performed on these samples; therefore, no conclusions can be made. INTERPRETATION OF RESULTS: 1. It is the opinion of the undersigned that questioned paints Q1a and Q2a could have originated from the same source as represented by the known submitted exemplar K or from another source exhibiting all of the same analyzed characteristics.
VTPB98	Items 2 and 3 could not be excluded as originating from Item 1. The number of layers were consistent between all three items. The thicknesses of the layers between the three items differed slightly but could not be definitively excluded because the samples received may have varied throughout the source. The IRs of the topcoats (green layers) and base coats (white layers) were consistent between all three samples. The peak locations and intensities were consistent for both layers in all three samples.
W8MKR8	With the microscopic exams (in this case stereomicrosope and fluorescence) we can not differentiate the paint chips from item 2 and 3 from the wall paint. Due to the high frequency of white wall paint, no statement can be made regarding the probability that item 2 or 3 originated from the wall using only optical methods.
WHN9NB	These exhibits were examined in an attempt to determine whether there is evidence of an association between the paint recovered from the subject in Items 2 and 3 and the wall at the crime scene as represented by the standard in Item 1. Item 1 consists of one (1) dark green paint chip having the following layer structure: 1. Dark green acrylic-polyvinyl acetate topcoat 2. White acrylic-styrene undercoat This paint chip exhibits characteristics consistent with those of architectural paint and was used as a standard representative of the damaged area of the wall for comparison purposes. Item 2 consists of two (2) dark green paint chips having the following layer structure: 1. Dark green acrylic-polyvinyl acetate topcoat 2. White acrylic-styrene undercoat These paint chips exhibit characteristics consistent with those of architectural paint. Microscopical, microchemical, and instrumental examinations and comparisons between these paint chips and the standard from the wall revealed that they are like one another with respect to their layer colors, layer textures, layer sequences, and the microchemical reactivities of Layer 2, as well as the detailed binder characteristics, pigment characteristics and elemental characteristics of their respective layers. It is therefore concluded that the Item 2 paint chips recovered from the subject could have originated from the damaged area of wall as represented by the standard. Item 3 consists of two (2) dark green paint chips having the following layer structure: 1. Dark green acrylic-polyvinyl acetate topcoat 2. White acrylic-styrene undercoat These paint chips exhibit characteristics consistent with those of architectural paint. Microscopical, microchemical, and instrumental examinations and comparisons between these paint chips and the standard from the wall revealed that they are like one another with respect to their layer colors, layer textures, layer sequences, and the microchemical reactivities of Layer 2, as well as the detailed binder characteristics, pigment characteristics and elemental characteristics of their respective layers. It is therefore concluded

TABLE 3

WebCode	Conclusions
	that the Item 3 paint chips recovered from the subject could have originated from the damaged area of the wall as represented by the standard.
WQHBUT	The microscopic shape, color and composition of the paint chips of Item 2 and Item 3 are identical to the paint of Item 1.
XGNKMQ	Based on visual observations with microscopy and the analytical results from infrared spectroscopy, Raman spectroscopy, and SEM-EDX, ITEM 2 and ITEM 3 cannot be distinguished from ITEM 1. Both trace samples (ITEM 2 and ITEM 3) could originate from the damaged wall (ITEM 1). The strength of support cannot be determined as we have no relevant database at hand for architectural paint.
Y6PDZ7	Questioned recovered paint chips (Items 2 and 3) differ from damaged area of the wall (Item 1) in the chemical composition of the binder of the fourth (white) layer and do not have a common origin. It was not clear from the scenario whether the fourth (white) layer was also part of the drywall substrate, and if it was, the results change to: The surface dark green layer and the second white layer of questioned recovered paint chips (Items 2 and 3) match the tested chemical and physical properties (color, chemical composition of binders and pigments) with the sample from the damaged part of the wall (Item 1) and they could have a common origin.
Y6UQPM	When the Questioned Exhibit 2 paint sample was compared to the Known Exhibit 1 paint sample, it was concluded that the Questioned Exhibit 2 paint sample could have originated from the source represented by the Known Exhibit 1 paint sample. When the Questioned Exhibit 3 paint sample was compared to the Known Exhibit 1 paint sample, it was concluded that the Questioned Exhibit 3 paint sample could have originated from the source represented by the Known Exhibit 1 paint sample.
ZKZCQN	The paint chips in Item 1,2 and 3 were consistent in colors and chemical compositions. Based upon the results, it was that the paint chips in Item 1, 2 and 3 could have originated from the same source.
ZLVWB3	On analysis, I found that Item 2 and Item 3 are similar to Item 1. Hence, I am of the opinion that the questioned paint chips recovered from the crime scene (Item 2 and Item 3) could have originated from the known paint sample representative of the damaged area of the wall.
ZPV983	Based on microscopic examination and compositional analysis, Item 2 was found to be similar with Item 1. Likewise, Item 3 exhibited characteristics consistent with Item 1.

Additional Comments

TABLE 4

WebCode	Additional Comments
4YA4ZY	The possibility that these three fragments do not have a common origin depends on whether the fragments collected from the suspect (items #2 and #3) come from another painted wooden surface that has the same detected properties: two layers, same color, sequence, texture, and thickness.
EEP2F9	Because paint is mass produced, it is not possible to state that a paint chip originated from a particular source to the exclusion of all other paints that exhibit the same microscopic properties, color, and chemical and elemental compositions. The pyrolysis gas chromatograph-mass spectrometer is out of service. This technique may provide additional discrimination.
HZWEY7	The samples were completely contaminated by particles originating from the carrier's layer of gypsum.
L6ET9G	At the moment we don't routinely received cases with that kind of samples in our laboratory. We work routinely with automotive paint chips.
MK3PNG	Items 2 and 3 were examined and compared to Item 1 using stereomicroscopy, polarized light, and fluorescence microscopy, microsolubility / microchemical tests, Fourier Transform Infrared Spectroscopy (FTIR), and Scanning Electron Microscopy-Energy Dispersive X-Ray Spectrometry (SEM-EDS). It was determined that questioned recovered paint chips (Item 2 and Item 3) were indistinguishable from known paint sample representative of the damaged area of the wall (Item 1) in visual color, layer sequence, microscopic characteristics, structure, texture, chemical, and elemental composition.
QP6WEW	The samples received were insufficient to repeat analysis.
QRBDUE	Verbal scale of strength of evidence; inconclusive, slight support, moderate support, moderately strong support, strong support, very strong support and extremely strong support. This scale can be used for both prosecution and defense propositions. This evaluation is based on my understanding of the relevant circumstances given. If these assumptions or any of the information is incomplete or incorrect, I will have to re-evaluate my findings.
RD88GV	Note: there were faint lines visible in an oblique cutting of the white paint layer for items 1, 2 and 3, under fluorescence. However, these 'layers' were not visible in the microtomes under fluorescence. IRs were performed on the top, middle and bottom areas of the white layer of each item, the chemical composition was consistent throughout, therefore the white was deemed as one layer.
WHN9NB	These items were examined macroscopically and by stereomicroscopy, microchemical tests, brightfield/polarized light microscopy, Fourier transform infrared microspectroscopy, scanning electron microscopy/energy dispersive x-ray spectroscopy, and pyrolysis gas chromatography/mass spectrometry.
Y6UQPM	ALS, MSP and Fluorescence was not done do to the instruments being out of service.

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 25-5452: Paint Analysis

DATA MUST BE SUBMITTED BY **Nov. 24, 2025, 11:59 p.m. EST** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A WebCode: L4LZFJ

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 were called to the scene of a local business due to an assault which left the paint on the wall damaged. A few hours later, they apprehended a suspect and recovered paint chips which resembled that of the wall. Police are requesting you examine the recovered paint chips and determine if they could have originated from the damaged area of the wall.

Please Note:

-Samples contained within each individual item are representative of a single source.

-The purpose of this test is the examination of paint; please ignore the drywall substrate.

Items Submitted (Sample Pack P2):
Item 1: Known paint sample representative of the damaged area of the wall.
Item 2: Questioned recovered paint chips.
Item 3: Questioned recovered paint chips.

1.) Could the questioned recovered paint chips (Items 2 and 3) have originated from the damaged area of the wall as represented by Item 1?

	Yes	No	Inconclusive
Item 2:	○	○	○
Item 3:	○	○	○

2.) Indicate the procedure(s) used to examine the submitted items:

Please check all that apply.

Microscopic Exams:	☐ Stereomicroscope	☐ Polarized Light
	☐ Fluorescence	
☐ Pyrolysis GC	☐ FTIR	☐ Solubility/Chemical
☐ XRS/XRF	☐ SEM/EDX	☐ Microspectrophotometry

Other (specify):

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

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

4.) Additional Comments

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

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)