

Primer Gunshot Residue

Nebraska State Patrol Crime Lab

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Outline

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- How does pGSR differ from firearms GSR and older testing methods? (6-11)
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What is GSR?

• When a firearm is discharged, particles and particulate are expelled.



Vaporous plume of primer GSR and powder GSR

• Primer gunshot residue comes from the primer in cartridge





What is pGSR?

Primer gunshot residue (pGSR) is composed of lead, barium, and antimony, which are the components of most primer mixtures. It is expelled from a firearm when it is discharged and escapes from any available opening in the form of a vaporous plume. As the plume cools, microscopic particles will condense and settle on surrounding surfaces.



Examples of pGSR particles



pGSR (New) vs Distance-GSR

What is the difference between primer GSR (new testing) and GSR firearms currently examines?



pGSR (New Testing)

Primer GSR (Trace)

- Analysis of elements from the primer of a cartridge
 - Particles in the plume
- pGSR particles collected from hands using SEM stubs





• Testing indicates person has discharged a firearm, been in the environment of a discharged firearm, or touched an object with pGSR on it (e.g. firearm)



Distance - GSR

Distance - GSR (Firearms)

- Analysis of components in ammunition (e.g. smokeless gunpowder, lead, copper, bullet fragments, and shotshell components)
- Used for distance determination and visualization of pattern/powder on clothing/other target







pGSR (New) vs Distance-GSR

What evidence goes to Trace?

- pGSR kits
 - Hands
 - Stubs from objects (vehicle)
- Clothing from shooting <u>suspect</u>
 - Was the clothing worn by the subject in the environment of a discharged firearm?
- Trace will not test shooting victim clothing for pGSR

What evidence goes to firearms?

- Distance determination
 - Clothing (victim)
 - Inanimate object/surface
- Is this a bullet hole?
- Are there visible residue patterns on clothing/objects that can be tested/explained as being adjacent to a firearm during discharge



pGSR Stubs vs. Presumptive Color Tests

What is the difference between pGSR SEM stub testing and presumptive color tests (field tests)?



pGSR Stubs vs. Presumptive Color Tests

pGSR SEM stubs

- Primer components confirmed
 - Rarely found in source other than pGSR

• Presumptive color tests (field tests)

- Colors indicate components of ammunition/firearm
 - Could be from GSR/firearm or environment/non-firearm source

If your agency is going to use both tests, <u>sample with NSPCL pGSR kit before</u> any other test

• Swabbing/spraying for color tests may consume pGSR particles



History of GSR Detection

Older types of testing

- Paraffin test
- Color tests
- Neutron Activation Analysis
- Atomic Absorption

• SEM/EDS

- New testing to NSPCL
 - Been used in laboratories since the 1970s
- Gold standard for pGSR testing



NSPCL pGSR Kit

NSPCL has created a pGSR kit – only accepted kit

FOR CRIME LABORATOR NBP CRIME LABORATOR	RY PERSONNEL ONLY RY CASE NUMBER	PLACE EVODENCE SEAL HERE
NEBRASKA STATE PATROL CRIME PRIMER GUNSHOT RES EVIDENCE COLLECTION	LABORATORY IDUE N KIT	And And And And And And And And And
FROM		REORDER NO: GSR-SEMICINE EXP. DATE: NONE LOT NO: \$6380
CHAIN OF POSSESSION — RECEIVED FROM: DATE: TIME: DATE: TIME: DATE: TIME: TIME:	 #11 #11	RITECHFORENSICS 800.438.7884 - tritechforensics.com
ECEIVED FROM: TIME: TIME: DELIVER SEALED KIT TO CRIME LABORATORY AS SOON AS	am pm s POSSIBLE	



NSPCL pGSR Kit

Kit Contents

- Instructions
- Analysis
 Information Form
- Gloves
- Two stubs (right hand, left hand)
- Evidence tape to reseal kit

A J	
NEBRASKA STATE PATROL CRIME LABORATORY INSTRUCTIONS FOR COLLECTING PRIMER GUNSHOT RESIDUE (GSR) IREAD ALL INSTRUCTIONS EFFORE USING METAL Vouring tool the site contempt the same deferred using with the source of the site	NEBRASKA STATE PATROL CRIME LABORATORY PRIMER GUNSHOT RESIDUE (GSR) ANALYSIS INFORMATION FORM IFIII out sli information requested than return form to kit envelope) Callecting Officer Badge Number Agency
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STEP 4 LEFT MAND: Fig. 2 STEP 4 LEFT MAND: Repair the processories of in Step 3 for the left hand, using the dial labeled LEFT MAND. FINAL INSTRUCTIONS	Type of Firearm Calber Auto leading petol Rife Shotgun Firearm Calber Firearm Manufacturer
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Sampling Hands

- Follow instructions inside pGSR kit
- Read all instructions before sampling
- pGSR kit instructions will be on NSPCL website





Sampling Information

- Allow kit to reach room temperature before using
 - Cold/frozen adhesive will not collect effectively
- When adhesive is exposed, do not touch it to anything other than area to be sampled
 - If stub contacts unintended area, new kit should be used
- <u>Dab</u> stub on collection surface
 - Press in up and down motion do not rub, slide, or use with a swabbing motion
 - Sample thoroughly/systematically using overlapping dabs

Do not include used gloves in kit when submitting



Hand Sampling

Kit contains two clear plastic vials with SEM stubs. The stubs have an adhesive surface to collect particles.

Sample (dab) circled areas shown below:









Hand Sampling

STEP 2 Put on the disposable gloves provided in this kit. Do not substitute with other gloves! Put on fresh gloves for each subject if performing collections on multiple subjects.

STEP 3 RIGHT HAND:

- A) Carefully remove the clear protective cover from the cap on the vial labeled RIGHT HAND.
- B) While holding the vial cap, press (dab) the black adhesive collection surface onto the subject's right hand until the areas show below in Figure 2 have been covered. Start with the web area including index finger & thumb, back of the hand, and finish with the right hand palm.
- C) After sampling the right hand, replace the protective cover on the RIGHT HAND vial cap.



STEP 4 LEFT HAND:

Repeat the procedure described in Step 3 for the left hand, using the vial labeled LEFT HAND.

Sampling Information

Avoid heavily soiled areas

- Dirt/dust, blood/moisture
 - Can defeat adhesive so pGSR may not transfer effectively to adhesive
- Sample around heavily soiled areas

Sample ASAP

- At scene whenever feasible
- Do not allow subject to wash/wipe hands
- Do not allow subject to place hands in pockets
- Do not remove subject's clothing before pGSR hand collection







Analysis Information Form

- Areas in red must be filled out or kit will be returned without analysis
 - Put timeframe (hours passed) between shooting and collection on submittal also
- If known, other info should be filled out for evaluation of analysis suitability
- Form is inside kit
 - Also on NSPCL website

Collecting Officer:				Badge Nur	nber:			
Agency:			Agen	cy Case Numl	ber:			
∐ Homicide ∐ Suicide	LI Assault	LI Drive-by	U Other:					
	SL	IBJECT INFOR	MATION					
Subjects Full Name:								
Subject is: 🛛 Victim	□ Suspect	U Witness	□ Other: _					
Subject is: 🛛 Living	🗆 Dead							
Was the subject shot:	T YES	D NO						
Any debris and/or blood or	n the subject's l	hands?	THE YES	□ NO				
Has subject washed his/he	r hands since sl	hooting?	T YES	D NO		NOWN		
Was subject in possession	of a firearm wh	en detained?	T YES	D NO				
Subject's occupation								
Subject's hobbies								
	SHO	DOTING INFO	RMATION				1	
Date and time shooting or	curred: Date		Time		AM	🗆 PM		
Date and time of GSR kit c	ollection: Date		Time		AM			
Shooting location (e.g., in k	titchen, parking	g lot, indoors, ou	utdoors):					
Type of Firearm:	evolver 🗆	Auto loading pi	stol 🛛 Ri	fle 🛛	Shotgun			
Firearm Caliber:		Firear	m Manufactur	er:				
Ammunition Caliber:		Amm	unition Manufa	acturer:				
							-	



Avoid Potential Contamination

- As officers carry firearms, they should be cautious while collecting
 - Be aware of surroundings and possible sources of pGSR

Gloves

- Wear gloves provided in kit
 - If gloves tear, can put on clean gloves that aren't from the kit
- Change gloves between sampling different subjects
- Wear gloves when sampling hands or collecting clothing
 - Change gloves between collecting items belonging to different subjects



Avoid Potential Contamination

Collection

- Avoid touching other items/evidence that may be heavily contaminated (e.g. guns, spent cartridges, firearms-related items) before sampling for pGSR
- Wash hands (if feasible) and don fresh gloves
- Minimize/avoid direct contact with areas to be sampled (hands, clothing) prior to collection

Sample at scene whenever feasible

• Sample before handcuffing, transporting, or fingerprinting to minimize loss of pGSR and/or potential risk of contamination



Avoiding Potential Contamination

• If transporting before sampling, can cover subject's hands with paper bags

- Wear gloves when bagging hands
- Lab will not test bags to see if particles may have come off inside bags

• Cleaning

- If must sample at station, clean surfaces before putting subject in area to collect
- Hand washing (e.g. after range, if handle/load firearm)
- Washing and cleaning can significantly help reduce risk of cross-contamination



Clothing

- <u>Permission must be granted by the Trace Supervisor to submit clothing</u> (suspect/elimination) for pGSR testing
 - If granted, document on submittal
 - Permission requirement to submit clothing only applies to pGSR testing
- Hand stubs should be a priority over clothing
 - pGSR kit (hands) must be collected within 8 hours
 - If cannot sample hands within 8 hours, clothing may be probative if have information on what subject was wearing during the incident
 - pGSR can stay on clothing longer than hands
 - pGSR on hands may show more recent discharge/handling of a firearm or that subject may have more recently been in the environment of a discharged firearm



Kits vs Clothing

- If an agency has a kit and clothing needing pGSR analysis:
 - The pGSR kit must be submitted first
 - Note on submittal form that clothing is available



- If pGSR kit is negative, agency will be contacted to discuss clothing
- Recommend clothing is sampled at lab
 - Controlled environment monitored for pGSR, analyst trained how and where to sample
 - <u>Clothing must be associated to a person</u>
 - Known (collected from subject)
 - Will be established through DNA testing



Vehicles

Use NSPCL approved kits for sampling vehicles

- Consider scenario when determining where to sample
- Label stub with location sampled
- Examples when may be useful:
 - Vehicle reportedly used in drive-by (person injured), pGSR kit cannot be collected from suspect within 8 hours
 - Aid in tying a vehicle to the shooting

• For a vehicle, maximum number of stubs tested: 4

- Most areas (window area, dashboard, steering wheel, etc.) 1 stub can be used
 - Wet surfaces should be allowed to air dry before sampling
 - Conclusions will not be drawn between areas sample to determine placement of shooter



Sampling Clothes and Vehicles

pGSR will remain on clothes/vehicles until removed

- While hands have retention studies, no time correlation for other surfaces
- Sampling of hands is first priority, sampling objects can be done if hands can't be sampled and testing of an object is critical to the scenario
- Washing or wiping an object/clothing can remove most/all pGSR



Criteria on the following slides were developed based on studies of pGSR, resource allocation and evidence storage space

If your case does not meet the criteria but you feel pGSR analysis is warranted because of additional case information, please contact the Trace Supervisor Amanda Neely.



- Do not submit shooting victim kits or clothing for pGSR (suicide, homicide, assault)
 - Shooting victims are known to have been in the environment of a discharged firearm. Cannot determine if a shooting victim discharged a firearm themselves or if they were shot by someone else.
 - If someone has been shot, they are a shooting victim regardless of their role in the crime.
- Only NSPCL approved pGSR kits will be analyzed



Time requirement

- From the moment a firearm is discharged, pGSR particles can be lost due to activity and movement.
- Sample immediately after contact with subject in the field
- Studies show not expected to detect particles on an active subject after 4-8 hours
- Kits (hands) collected more than <u>8 hours</u> after the incident will not be analyzed.
 - Time requirement only applies to pGSR kits collected on hands





• The date and time of the shooting incident and collection of pGSR kit must be provided Analysis information form inside kit

SHOOTING INFORMATION							
Date and time shooting occurred:	Date	Time		🗆 РМ			
Date and time of GSR kit collection	: Date	Time		🗆 РМ			

 Also provide timeframe (hours passed) on the submittal (allows kit to be screened if will be analyzed)





- Kits without timeframe between shooting and collection will be returned without analysis
- Can provide information and resubmit (document on submittal, do not open kit)





Prior exposure of subject to pGSR

- Do not submit if found with a firearm in their possession
- Testing cannot differentiate if they discharged a firearm or simply handled the one in their possession.





- Type of case
 - Testing will be <u>limited to cases involving crimes against persons</u>, such as the following offenses:
 - Homicide
 - Attempted homicide
 - Aggravated assault
 - Aggravated robbery
 - Questioned death or death investigations (suspect and elimination kits only)
 - If you have questions regarding whether your case qualifies for testing, contact the Trace Supervisor Amanda Neely prior to submission.



 DO NOT package pGSR items with firearms, ammunition, or other firearm evidence

- These are potential sources of pGSR contamination
- If evidence is incorrectly packaged, submitting agency will be contacted
 - Evidence may be returned to the agency to repackage correctly
- How the evidence is packaged may affect future testing
 - If a loose clothing item is in contact with a pGSR source (e.g. firearm), evidence will not be analyzed.



- Primer GSR evidence should ALWAYS be individually packaged and submitted separately from all other evidence
 - Kits must be packaged separately from clothing items as clothing requires permission to submit.
 - Please contact Trace Supervisor Amanda Neely with any packaging questions <u>before</u> evidence is submitted.



- Permission must be granted to submit suspect clothing for pGSR
 - Document permission on submittal
 - If kit has already been tested and now submitting clothing, mark as additional submission
 - Document on submittal who clothing is from
 - If kit and clothing are available, kit must be submitted first
 - Permission to submit clothing only applies to pGSR testing

Kit was orignally submitted. Permission granted to submit clothing. IS IT OKAY TO CONSUME SAMPLES2 OR BIOLOGY SAMPLES PLEASE CONTACT ME BEFORE CONSUMING SAMPLES YES, CONSUME SAMPLES IF NEEDED YES, ADDITIONAL SUBMISSION IF 'YES', PLEASE PROVIDE ANALYST'S NAME IF KNOWN NO, FIRST IS THIS AN ADDITIONAL SUBMITTAL OR RE-SUBMITTAL? SUBMISSION VES. RE-SUBMISSION OF ITEM(S) YES (PLEASE EXPLAIN) IS THERE OTHER EVIDENCE IN THIS CASE THAT HAS BEEN SENT TO ANOTHER LABORATORY FOR TESTING EVIDENCE DISPOSITION MAIL BACK BY CERTIFIED MAIL SUBMITTING AGENCY WILL PICK UP WITHIN 2 WEEKS OF NOTIFICATION INVENTORY OF EVIDENCE SUBMITTED RESUBMITTED ITEM # DESCRIPTION EXAMINATION(S) REQUESTED ITEM shirt from John Smith (sus) pGSR spoke to Amanda Neely - permission granted to submi



- Vehicle maximum number of stubs that may be submitted is four
- Provide a brief synopsis of the case can be done on submittal form
 - Case information is needed to evaluate usefulness of pGSR analysis
 - Is the subject a shooting victim? not useful
 - Did the subject move/handle a firearm? not useful
 - Is the person carrying a firearm? not useful
 - Was the clothing found at the scene and can't be associated to an individual? not useful
 - If analysis will not yield useful interpretation, evidence will be returned unworked.



Submission Guidance Document

- On NSPCL website, a submission guidance document is available
 - Brief overview of pGSR
 - Summary of submission criteria and sampling guidance
 - Where to purchase more kits

	Nebraska State Patrol Crime Laboratory
Introduction	Primer gunshot residue (pGSR) is expelled during the discharge of a firearm. It is formed from the explosion of the primer at the base of the cartridge. The residues escape through openings in the firearm and the end of the barrel. pGSR kits are designed to collect these particles and the Trace Evidence section uses SEM/EDS for analysis. pGSR analysis cannot determine whether or not an individual has discharged a firearm.
	The presence of primer gunshot residue may occur for the following reasons:
	 The subject discharged a firearm. The subject was in close proximity to the discharge of a firearm. The subject was in contact with an object/surface with pGSR on it.
	The absence of primer gunshot residue may occur for the following reasons:
Sampling and submission criteria	 The subject discharge a firearm. The subject discharged a firearm but pGSR was not deposited in detectable amounts or deposited on the sampled area. The subject discharged a firearm but pGSR was removed by wiping or washing prior to the collection of the primer gunshot residue kit.
	Interpretations regarding the number of particles on the right versus left hand, specific areas of clothing, or comparing the number of particles between pGSR kits cannot be made due to factors including the variability of transfer and movement after discharge.
	 GSR examinations will only be conducted in cases where significant information may be obtained. At a minimum, <u>all submissions should meet the following criteria</u>: Do not submit kits or clothing from shooting victims (suicide, homicide, assault, etc.) A shooting victim is known to have been in the environment of a discharged firearm. Do not submit kits collected <u>more than 8 hours</u> after the shooting in question. Only NSPCL approved kits will be accepted and analyzed. Do not submit a kit if the subject is found in the possession of or claims to have handled a firearm. Analysis cannot distinguish between someone having discharged a firearm or simply handling a firearm. pGSR kits/clothing must be individually packaged and submitted separate from other evidence. Do not package with firearms evidence or any other evidence. Permission must the scanced by the Trace Supervisor to submit the sime items for
	pGSR analysis. pGSR kits must be submitted before clothing when both are available. • Do not submit items for pGSR analysis unless they are associated with an

Primer Gunshot Residue (nGSR)



Submission Information

- Examination requested on submittal for primer gunshot residue should be:
 - PGSR
 ITEM # DESCRIPTION
 EXAMINATION(S) REQUESTED
 RESUBMITTED
 TEM
 1
 PGSR kit John Smith (sus), 3 hrs
 PGSR
- Examination requested on submittal for distance determination (firearms) should be:
 - Distance determination or distance-GSR

ITEM #	DESCRIPTION	E	XAMINATION(S) REQUESTED	RESUBMITTED ITEM
1	shirt from John Doe (victim)	(distance-GSR	



Submission Information

Submittal should have:

- Who pGSR kit/clothing belongs to
- For submitted kits timeframe of shooting incident to collection
- If permission granted to submit clothing
- Case scenario
- Marked if add-on or resubmittal
- Submittal should be in an envelope attached to the outside of the packaging when evidence is mailed



Packaging

- Package each pGSR kit to protect it
 - If mailed, should be inside a padded envelope
 - Should be submitted separate from other evidence
- When submitting clothing for pGSR (prior approval required):
 - Each item individually packaged inside clean, unused container
 - Typically only outermost shirt submitted
 - <u>Use minimal handling, folding or shaking</u> so as to not lose pGSR particles







Packaging

- Clothing submitted for both pGSR and DNA testing <u>does not need prior</u> <u>approval</u> from Trace Supervisor
 - Item needing both pGSR and DNA must be in its own container and individually submitted



Outer shirt needing pGSR and DNA (just this item in bag)



Another clothing item that needs only DNA



Proper Packaging

- pGSR kit submitted first
 - Stubs and info form only (no gloves)
 - Padded envelope if mailed
- One item per package
- pGSR items submitted in separate containers from other items
- Seal has initials across the tape onto the package



pGSR kit – stubs and form (no gloves)



One individual clothing item





Proper Packaging

- Submittal lists person associated with kit/clothing and timeframe between incident and collection
- Permission for submitting clothing (pGSR evidence only)

CASE SCENARIO Jane Doe found deceased by John Smith. He states he was not present at time of shooting.									
FOR BIOLOGY SAMPLES IS IT OKAY TO CONSUME SAMPLES? YES, CONSUME SAMPLES IF NEEDED PLEASE CONTA					PLEASE CONTACT ME BEFORE CONSU	JMING SAMPLES			
IS THIS AN ADDITIONAL INO, SUBMITTAL OR RE-SUBMITTAL?		NO, FIRST SUBMISSION	YES, AD	YES, ADDITIONAL SUBMISSION YES, RE-SUBMISSION OF ITEM(S):		IF 'YES', PLEASE PROVIDE ANALYST'S NA	ME IF KNOWN:		
IS THERE OTHER EVIDENCE IN THIS CASE THAT HAS BEEN SENT TO ANOTHER LABORATORY FOR TESTING?			NO NO		YES (PLEASE EXPLAIN)				
EVIDENCE DISPOSITION									
MAIL BACK BY CERTIFIED MAIL SUBMITTING AGENCY WILL PICK UP WITHIN 2 WEEKS OF NOTIFICATION									
INVENTORY OF EVIDENCE SUBMITTED									
ITEM #		DESCRIPTION				EXAMINATION(S) REQUESTED	RESUBMITTED		
1	pGSR kit - John Smith (sus), 3 hrs), 3 hrs	pGSR			

ITEM #	DESCRIPTION	EXAMINATION(S) REQUESTED	RESUBMITTED ITEM
1	shirt f/John Smith (sus)	pGSR	
	spoke to Amanda Neely - permission granted		



Improper Packaging

- Multiple items in same package
- pGSR kit packaged with clothing
- Items not individually packaged to prevent cross-contamination between items
- Gloves in pGSR kit



• Bag contains:

Multiple clothing items



- Box contains:
 - pGSR kit
 - Items for latent prints
 - Gun
 - Clothing for DNA

- Bag contains:
 - pGSR kit
 - Shirt for pGSR



Analysis

- Samples analyzed using scanning electron microscope/energy dispersive X-ray spectrometry (SEM/EDS)
- Elemental composition
- Morphology





 Characteristic particle – Lead, barium, and antimony combine into a single particle



Reports

- No work reports will be issued if submission criteria are not met
- Reports where pGSR is detected will include statement:
 - The presence of primer gunshot residue on a subject's hands indicates the subject discharged a firearm, was in close proximity to a firearm when it was discharged or handled an object with primer gunshot residues on it.
- Reports where no pGSR is detected will include statement:
 - The absence of primer gunshot residue on a subject's hands indicates the subject did not discharge a firearm, discharged a firearm but primer gunshot residue was not deposited in detectable amounts, or discharged a firearm but the primer gunshot residue was removed by wiping or washing prior to the collection of the gunshot residue kit.



When is pGSR analysis the most helpful?

- Refuting a statement, such as: Suspect claims they did not shoot a gun and/or was not near a shooting; suspect does not have a gun on person at the time of arrest
- Support a statement, such as: Witness claims they saw suspect shoot a gun but suspect has not provided any additional information; suspect does not have gun on person at time of arrest

When does pGSR analysis have limited value?

- Suspect admits to discharging a firearm, being in the proximity of a firearm when it was discharged, or handling a firearm
- The subject washed their hands before sampling
- A vehicle/object is known to have exposures to pGSR other than this incident



• Do pGSR kits expire?

• No

Can they be stored in patrol vehicle?

- Yes
- Make sure at room temp when using, frozen adhesive won't be sticky enough to collect

How can particles be lost from hands?

• Movement of subject such as washing of the hands, putting hands in pockets, touching other objects. Environmental conditions including wind and rain.



• If the subject has washed their hands, is collection useful?

- Washing of hands will likely remove pGSR particles
- Can include sampling of wrist area.

Are you able to tell how long particles have been present on an <u>inanimate</u> object/surface?

- No, a particle will remain on a surface until it is removed.
- Particles will not breakdown over time



• Are you able to tell what firearm/ammunition the particles came from?

• No, individual firearms/ammunition will not produce unique particles.

What other sources produce particles similar to pGSR?

• Airbags, brake pads, and a certain type of firework can produce particles of lead, barium, and antimony. However, airbags, brake pads, and the firework also produce elements not consistent with pGSR. For this reason, entire populations of particles are taken into consideration when analyzing for pGSR.



- Can an interpretation be made comparing the number of particles on the right vs. left hand or between kits of various subjects?
 - No, this cannot be done due to factors including the variability of transfer and movement/activity after discharge.
- If the subject admits to moving the firearm after a shooting, can pGSR determine whether they discharged the firearm or moved it?
 - No, pGSR analysis cannot tell the difference between discharging a firearm or simply handling a firearm.



- How could someone get pGSR particles on their hands?
 - Discharging a firearm, being in the environment of a discharged firearm, touching a firearm, or touching an object with pGSR could cause someone to have particles of pGSR on their hands.
- If you need to sample a steering wheel/object for touch DNA and pGSR (that cannot be submitted for sampling by the lab), which should be done first?
 - Swabbing for DNA may remove pGSR particles and stubbing for pGSR particles may remove touch DNA
 - Typically, DNA should be sampled first as it may be more probative to your case
 - Can contact Trace Supervisor Amanda Neely to discuss a specific case



What should I do if I don't have a kit on hand?

- Contact NSP troop area or lab to see if they have a kit
 - Must be collected in 8 hours, sooner the better
- Can collect clothing (if know what they were wearing at the time of the incident)
- Do not use a cotton swab for collection of pGSR
- If I am sampling from a vehicle, where should I sample?
 - Case dependent
 - If driver is suspected to have discharged firearm areas such as: steering wheel, dash, headliner, inner door panel, window frame
 - If passenger areas such as: headliner above seat, inner door panel, seat, window frame
 - Will not make correlations between areas sampled to determine placement of shooter



If pGSR was detected on hand stubs, what does it mean?

- Subject discharged a firearm
- Subject was in close proximity to a discharged firearm
- Subject came into contact with a surface that contained pGSR
- If pGSR was not detected on hand stubs, what does it mean?
 - Subject did not discharge a firearm
 - Subject discharged a firearm but pGSR was not deposited in detectable amounts or was not deposited in the area sampled
 - Subject discharged a firearm but pGSR was removed by wiping or washing prior to collection of the pGSR kit



If you have any questions about pGSR or case suitability, please contact the Trace Supervisor Amanda Neely. (Contact information on last slide)



pGSR Kits

- An initial allotment of NSPCL approved kits will be provided
 - Provided by the laboratory or obtained from NSP Troop Areas
- If more kits are needed, agencies can purchase NSPCL approved kits from:
 - Tri-Tech Forensics
 - Call or e-mail and provide the order number: <u>GSR-SEM(Q)NE</u>
 - 800-438-7884
 - A minimum of 10 kits (1 case) must be ordered at a time
 - Price of 1 case \$63.50 (cost as of March 2021)



pGSR kits

- Kit ordering information will be on NSPCL website
- Quality testing on pGSR kits
 - Kits provided by NSPCL and NSPCL kits ordered directly from Tri-Tech Forensics are checked for quality before dissemination to agencies
 - If an agency receives the NSPCL approved kit, it has been quality checked, no action is required by the agency
- Due to quality testing, ordering kits may take ~4-6 weeks, plan accordingly



Available on NSPCL Website

- Submission Criteria Document
 - Has brief overview of pGSR, submission criteria, where to purchase more kits
- pGSR kit instructions
 - Provided so can be familiar with instructions previous to needing to use the kit
- Analysis Information Form
- pGSR PowerPoint presentation
- Frequently asked questions document
- Information where to purchase NSPCL approved kits



Contact Information

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