

	Iredell County Sheriff's Office Crime Laboratory	Issue Date: 2013/10/16	Revision: 0
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**Iredell County Sheriff's Office Crime Laboratory
233 Stockton Street
Statesville, NC 28677**

Laboratory Director
Misty S. Icard

Quality Assurance Officer
Lori A. Knops



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PREFACE

Technological advances constantly create a need to update evidence manuals. It is important that the investigating officer be aware of the changes in evidence collection and handling which result from these technical gains. We hope this edition of the Forensic Services Guide can offer clear guidance on evidence recognition and collection.

The handbook is organized to provide the following:

- A description of services provided by the Iredell County Sheriff's Office Crime Laboratory. This includes services offered by each Discipline and Category of Testing, the types of analytical techniques used for each evidence analysis, and a list of services we cannot provide. In the case of services we cannot provide, we make every effort to help the investigating officer find a suitable alternative for analytical needs.
- General guidelines for the collection, preservation, and packaging of physical evidence.
- The procedure for submitting physical evidence.
- Procedures for handling various types of physical evidence.

This guide is not meant to be a comprehensive reference source for the collection and handling of physical evidence. An attempt has been made to briefly highlight the basic principles and requirements for dealing with the more common evidence types. The handbook cannot replace the caution, care, and probing reflection that are the requisites of the thorough, successful investigating officer. The investigating officer is encouraged throughout the handbook to call the Crime Laboratory for assistance. This is probably the best advice that we can provide: The wise investigating officer seeks counsel.

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INTRODUCTION

IREDELL COUNTY SHERIFF'S OFFICE CRIME LABORATORY DIRECTOR – MISTY S. ICARD

233 Stockton Street
Statesville, NC
(704) 924-4082
micard@co.iredell.nc.us

The Iredell County Sheriff's Office Crime Laboratory is composed of the following Disciplines and Categories of Testing:

Discipline		
Drug Chemistry	Toxicology	Latent Prints
<i>Categories of Testing:</i> Controlled Substance Clandestine Laboratory Analysis	<i>Categories of Testing:</i> Human Performance Forensic Toxicology <i>Sub-category:</i> Blood/Alcohol	<i>Categories of Testing:</i> Latent Print Processing Latent Print Comparisons 10-Print Comparisons Individual Characteristics Database - AFIS

The Iredell County Sheriff's Office Crime Laboratory provides the Iredell County Sheriff's Office and other criminal justice agencies within the state the scientific investigative support associated with matters of a criminal nature.

This handbook offers a fairly detailed list of services offered in each Discipline and methods of analysis typically used in these examinations. Also, the handbook describes the types of services and analyses the Iredell County Sheriff's Office Crime Laboratory does not provide.

Evidence from all types of crimes is accepted from local, county, state, and federal law enforcement agencies. Other agencies are assisted on a cooperative basis when a special need arises.

The Iredell County Sheriff's Office Crime Laboratory is responsible for providing scientific support and expert testimonies relating to physical evidence from crimes by:

- Assisting at the scenes of clandestine laboratories.
- Performing scientific examinations and evaluations of physical evidence in order to provide information relevant to criminal investigations.
- Participating in pretrial consultations and by providing reports, charts, graphs, and other exhibits for court purposes.
- Providing expert testimony in court trials, hearings, and depositions.

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CRIME LABORATORY AND SERVICES

Physical Address:

233 Stockton Street
 Statesville, NC
 Telephone (704) 924-4082
 FAX (704) 878-6270

Services:

- Latent Print Analysis (Processing, Comparisons, 10-Print Comparisons, AFIS)
- Controlled Substance Analysis
- Clandestine Laboratory Response and Analysis
- Blood Alcohol Concentration (BAC) Analysis

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CRIME LABORATORY AREAS OF RESPONSIBILITY

The following is a list of Law Enforcement Agencies in which the Iredell County Sheriff's Office Crime Laboratory provides forensic services for:

Iredell County Sheriff's Office
 Alexander County Sheriff's Office
 China Grove Police Department
 Cleveland County Sheriff's Office
 Cleveland Police Department
 Concord Police Department
 Davidson County Sheriff's Office
 Davie County Sheriff's Office
 East Spencer Police Department
 Faith-Granite Quarry Police Department
 Landis Police Department
 Lincoln County Sheriff's Office
 Lincolnton Police Department
 Mocksville Police Department
 Mooresville Police Department
 Salisbury Police Department
 Shelby Police Department
 Spencer Police Department
 Rockwell Police Department
 Rowan County Sheriff's Office
 Troutman Police Department

(As of 10/03/2013)

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PROCEDURES FOR EVIDENCE SUBMISSION

The following procedures should be observed to properly prepare and submit physical evidence to the Crime Laboratory.

PERSONAL DELIVERY

- Currently, personal delivery is the submission method of evidence to the Iredell County Sheriff's Office Crime Laboratory.
- Personal delivery allows the investigating officer to discuss the case and its complexities with the forensic analyst.
- Evidence delivery and pick-up time is every Tuesday, between the hours of 9:00am-11:30am and 1:30pm-3:00pm. This time is subject to change and an email to agencies will be sent as soon as possible, in the event of such change. If an agency needs to arrange a delivery outside of scheduled hours, call the laboratory and an attempt to accommodate the agency will be made.

REQUEST FOR LABORATORY EXAMINATION (FORM 4)

The Request for Laboratory Examination (RFLE), Form 4, is the Iredell County Sheriff's Office Crime Laboratory form used for submitting evidence to the Crime Laboratory. This form must accompany all submissions of evidence to the Crime Laboratory. Instructions for the use of this form are printed on page 1 of the 2 page form.

Some important points to remember when filling out this form are as follows:

- Fill in all of the requested information. Incomplete forms cannot be accepted. If a suspect or victim name is unknown, indicate that in the appropriate block on the form.
- Link the current submission with any previous submission(s) from the same case. There is a convenient box near the top of the form for this purpose.
- Always list the most serious offense according to the Uniform Crime Reporting (UCR) system. Other offenses may also be listed.
- The phone number and email address of the investigating officer are important. The forensic analyst(s) working on the case may need to discuss the case with the investigating officer.

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- List the items in order of priority (the order in which the requester would like the evidence examined). Use the item numbers (or alpha-numeric name) assigned to the evidence and a very brief generic physical description to identify the item and its priority.

Any questions regarding the use of the RFLE or the submission of evidence should be referred to the Crime Laboratory. The address and phone number of the Crime Laboratory are listed on pages 4 and 5 in this handbook.

Once the evidence is submitted, the analyst may contact the investigating officer in order to determine the best approach to the examination of the evidence. If the analytical capability/resources to complete a specific examination are not available, the agency will be contacted with that information and possible solutions. It is understood that the most effective use of Crime Laboratory resources may not allow every item submitted to be examined. For example, if multiple items are submitted in a single-suspect controlled substance case, only a single item may be analyzed and the agency would not receive pre-notification beyond what is described here. In a controlled substance case that will meet a specific weight threshold, multiple items may each be chemically analyzed up to the specific weight threshold, if practicable. A more detailed explanation of controlled substance analysis is found in the Drug Chemistry Evidence section of this handbook. If specific items require analysis or if contact is requested prior to the examination, this should be clearly noted on the RFLE submitted with the evidence. Unless explicitly stated by the agency, submission of the RFLE is acceptance of Iredell County Sheriff's Office Crime Laboratory authority to approve technical deviations from test methods or technical procedures.

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GENERAL GUIDELINES FOR THE COLLECTION, PRESERVATION, AND PACKAGING OF PHYSICAL EVIDENCE

There are a number of general instructions that will be helpful to the investigating officer. Evidence requiring special handling will be discussed in the appropriate sections of this handbook.

A few precautions are continually repeated throughout the handbook. The reason for the repetition is that these precautions are important. Failure to observe them may seriously affect the evidence examination and, potentially, the outcome of the case. Precautions regarding bloodborne pathogens are mentioned repeatedly due to the hazards that biological materials present.

Some of the guidelines may vary with your departmental policies. The guidelines here express the manner in which the Crime Laboratory would prefer physical evidence to be collected, preserved, packaged, and submitted.

PRECAUTIONS

Biohazard Contamination

- The handling of items contaminated with biological fluids and stains presents hazards due to the possible presence of bloodborne pathogens. Hepatitis B (HVB) and AIDS (HIV) are of particular concern to those handling liquid blood or bloodstained items. Special care must be taken when handling such materials. **It is strongly advisable to consult your agency "Occupational Exposure to Bloodborne Pathogens Plan," which is required by the Federal Occupational Safety and Health Act (OSHA) and the Occupational Safety and Health Division (OSH) within the N.C. Department of Labor.**
- **Infectious evidence—Use universal precautions when handling biological specimens or stains** (i.e., act under the assumption that the specimen or stain contains a dangerous pathogen, particularly HIV or Hepatitis B, and proceed accordingly). Use appropriate protective equipment, such as face, eye, hand, and shoe protection. Pointed and sharp-edged objects must be handled with extreme care. Blind searches are definitely to be avoided. Searchers must not place their hands into any space that is not first visually inspected. Eyes must be protected if splashes are likely to occur.
- Eating, smoking, and the drinking of beverages at the crime scene must be prohibited. Shoes should be protected from blood on the floor or grounds. The tracking of blood beyond the perimeter of the crime scene must be avoided. Careful processing of the crime scene will minimize the risk of contamination of evidence and danger to the investigating officer.

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- Good personal hygiene must be observed. The hands should be washed thoroughly after the removal of protective gloves, even if the gloves are not cut or punctured. Used protective gear must be disposed of in a manner specified by state and federal regulations.

- Any questions should be directed to the following:

N.C. Department of Labor, 1101 Mail Service Center, Raleigh, NC 27699-1101
(919) 807-2796 or 1-800-NC-LABOR
<http://www.nclabor.com>

GENERAL GUIDELINES

- Meet legal requirements before entering the crime scene or collecting evidence.
 - Determine if a search warrant or court order is necessary before proceeding.
 - Maintain a chain of custody. Proper documentation is necessary to prove the chain of possession from the time of collection until entered into evidence in court. It may be necessary to prove the integrity of the evidence at some later time.
- Take extra caution when collecting evidence, especially the first responders to a scene. Use gloves and possibly face masks to prevent contamination of possible biological evidence. Take steps to avoid contamination of latent evidence, such as fingerprints, shoeprints, etc.
- Collect a sufficient number and amount of samples. Remember that most of the time it is difficult, if not impossible, to return to the crime scene for more samples.
 - Collect small items of evidence on clean pieces of paper and fold the paper, seal, and label (see illustrations of paper folds at the end of section). More details concerning the packaging of controlled substances is found in the Drug Chemistry Evidence section of this handbook.
- Labeling evidence: The following information should be noted on the container or attached tag:
 - Agency name and case number
 - Agency item number (same as listed on the RFLE)
 - Brief description of item
 - Source of item/name of subject (use actual name, not "suspect/victim")

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- Location (where found)
- Date/time of collection
- Name or initials of person collecting item
- Preserving evidence: The general rule is to submit the evidence in the same condition as when collected. As with nearly all rules, there are exceptions. These exceptions are noted in the discussion of each evidence type (e.g., some evidence must be dried, refrigerated, or frozen).
 - The evidence must not be allowed to spoil, deteriorate, evaporate, or in any other manner be diminished in content or evidentiary value.
 - Biological stains, leather goods, plaster casts, and vegetable matter must be thoroughly dried before submission. After drying, this type of evidence is best stored in clean paper containers. Do not use plastic containers, if possible.
- Do not contaminate the evidence: The evidence must be handled in a proper manner so that no extraneous material or substance is added.
 - Place evidence directly into a container. Avoid placing the evidence on a surface, particularly one that is soiled or that may contain material similar to that of the evidence.
 - Handle the evidence as little as possible.
 - Package items separately so that transference of possible contaminants does not occur. Care must be taken to avoid leakage and/or breakage so that liquid samples, such as blood, do not leak on other items of evidence.
 - Where gloves.
- Sealing evidence:
 - Use non-removable tape or evidence tape to seal evidence. Evidence packages are properly sealed if the evidence inside is protected from loss or contamination and an attempt to enter the package would be noticed. Staples on envelopes or paper bags do not constitute proper seals. The open flaps of envelopes must be sealed with tape, and each strip of tape must be initialed. **The initials must be written across the tape and onto the container surface. It is also a good idea to include the date across the tape seal.** Particular care must be taken when sealing containers with controlled substances.

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- Bottles and jars must be capped tightly to avoid leakage and then sealed with tape. The tape must extend across the top of the lid and down both sides of the body of the container.
 - Do not lose any evidence. Package and seal the containers to avoid leakage, tearing, or the sifting of evidence through cracks or small openings.
 - It is not always practical or necessary to seal evidence in a container in order to protect it from loss, cross contamination, or deleterious change. For example, containerization and sealing are not necessary for large items such as furniture, doors and windows, and automotive components which cannot be packaged and sealed in a practical manner. In this case, the area of the item that has forensic importance should be covered so that the area is protected. The covering should be clearly marked indicating the specific area of interest.
- Control/Reference samples:
- Control (reference/known) samples are necessary when comparisons are to be made.

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LATENT PRINTS EVIDENCE

INTRODUCTION

Latent prints are perhaps the most common form of physical evidence and one of the most valuable. They relate directly to the objective of every criminal investigation and that is the identification of the offender. Because latent prints are fragile and susceptible to destruction, proper collecting, handling and packaging of the evidence is very critical. The Iredell County Sheriff's Office Crime Laboratory Latent Prints discipline can perform latent print processing, latent print comparisons, 10-Print comparisons, and entry into AFIS - Automated Fingerprint Identification System.

PRECAUTIONS

- Item submissions should be for the development of latent prints and/or analysis only. Items not requiring latent print services should not be submitted.
- Wet items should be thoroughly dried at room temperature prior to packaging.
- Liquids in containers should be removed when practical. EXCEPTION: Containers with flammable liquids will not be accepted.
- Perishable food items are to be removed from its container.
- Fragile and/or sharp pointed items (i.e., glass, knife) should be packaged in a container and then packaged in another container with adequate packing material.
- If submitting drug packaging for latent analysis, the drug packaging should be separated from the drugs and packaged separately for submission to the Crime Laboratory.
- A syringe with the needle attached, razor blade, or other sharps submitted to the Crime Laboratory will not be accepted, regardless of the packaging without prior Crime Laboratory management approval.

NOTE: *The cutting or shearing of a needle from a syringe is completely prohibited by federal regulations.*

COLLECTING, HANDLING, AND PACKAGING OF EVIDENCE

The types of surfaces from which latent prints can be developed fall into two categories: (1) porous (2) non-porous.

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As a general rule, and with the proper training, it is better to develop and lift latent prints on non-absorbent surfaces. These fragile prints left unprotected on this type of surface are susceptible to destruction if rubbed or brushed against.

Because of their porous, absorbent surfaces, several paper and cardboard items may be packaged into a single container. Latent prints left on this type of surface are "absorbed" and will not be destroyed by contact with another surface.

Biohazard Contamination

➤ Investigating officers must use **universal precautions** (i.e., treat all blood and bloodstained objects as sources of bloodborne pathogens and take appropriate protective actions). Immunization shots are available for HVB. Protective gear must be worn to protect the hands. Pointed and sharp-edged objects must be handled with extreme care. Blind searches are definitely to be avoided. Searchers must not place their hands into any space that is not first visually inspected. Eyes must be protected if splashes are likely to occur.

➤ Any questions should be directed to the following:

N.C. Department of Labor, 1101 Mail Service Center, Raleigh, NC 27699-1101
(919) 807-2796 or 1-800-NC-LABOR
<http://www.nclabor.com>

➤ The outside of the package will require a "**BIOHAZARD**" label or markings.

Post Mortem Prints

➤ In homicide and death investigation cases, the agency should make every effort to obtain post mortem prints. The laboratory should be contacted if assistance is needed.

➤ If the fingers are flexible, it is possible to obtain the deceased's prints through the standard ink and card method.

➤ In some difficult cases, it may be necessary to remove the hands or fingers from the body. Legal authorization and permission from the family of the deceased must be obtained.

➤ The agency will notify the laboratory in advance of its intent to deliver the body parts.

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Bloody Evidence

- Latent print processing of an item may affect possible serology and/or DNA analyses of the item, please contact the Crime Laboratory for more information. Iredell County Sheriff's Office Crime Laboratory does not have a Biology discipline of testing, please contact the Crime Laboratory to decide the best course of action in accomplishing both tasks.
- If swabbing evidence for DNA is necessary, the Items should be swabbed prior to submission to the Iredell County Sheriff's Office Crime Laboratory. Evidence will not be swabbed at the Crime Laboratory.

Documents

- If an item requires both latent print and document examinations, priority should be given to the latter. Send to the appropriate forensic laboratory for document examinations (i.e. the North Carolina State Crime Laboratory).
- Handwritten evidence in certain inks must be examined before being processed for latent prints. Chemical processing may cause these inks to run or bleed. Send to the appropriate forensic laboratory for document examinations (i.e. the North Carolina State Crime Laboratory).
- Indented writing is the impression of the pen that transfers to the sheets under the sheet with writing. The item must be examined before being processed for latent prints. Latent print processing will destroy indented writing. Send to the appropriate forensic laboratory for document examinations (i.e. the North Carolina State Crime Laboratory).
- Some agencies are equipped to chemically process items for latent prints. If the latent print processing is completed by the submitting agency, a notation should indicate so.
- The number of pages in every book and magazine submitted to the Crime Laboratory varies. If more than processing the cover for latent prints is needed, indicate how many of the pages are to be examined.

Firearms

- If the firearm is to be processed for latent prints, caution is necessary not to smear or destroy the prints. The submitting agency should call the Crime Laboratory for instructions before submitting the evidence.
- Evidence labels should not be placed on areas of the weapon that are receptive to latent prints.

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- Unload the weapon, if possible. If unloading a semi-automatic pistol, remove and carefully handle the magazine if it is to be processed for latent prints. Do not remove the cartridges from the magazine. Include all unloaded ammunition with the firearm and handle ammunition as little as possible.
- If the unspent cartridges in the magazine are to be processed for latent prints, note that request on the Request for Laboratory Examination.
- Knives/Firearms/sharp items: should be placed in a new cardboard box and secured with plastic zip-ties. **Do not pack the sealed box with "filler" material; these materials risk rubbing away any fingerprints.**
- All firearms must be unloaded before being hand-carried to the laboratory. If the firearm is difficult to unload, contact the Crime Laboratory for assistance.

Adhesive Tape

- A combination of powder and chemical applications are used to develop latent prints on the adhesive and non-adhesive side of tape.
- Attention must be given to perform trace evidence collection prior to latent print processing. Special care must be taken not to contaminate or lose any small particles of evidence. Send to the appropriate forensic laboratory for trace examinations (i.e. the North Carolina State Crime Laboratory).
- If possible, place the tape lightly onto a sheet protector or a sheet of heavy plastic. Avoid "wadding" the tape and packaging in paper containers.

Lift Cards

- After a powder-developed latent print has been lifted and placed on a card backing, that card should be properly identified. Written information should include the date, crime type, case number, crime scene location, name of the person who made the lift, location of the lift, and the type of object.
- A simple sketch of the object to describe the location from where the lift was made can be an addition to written information.
- Using small directional arrow to indicate "UP" is helpful in orienting the placement of a latent print.
- Any of the officer's prints appearing along the edges of the tape should be crossed out and initialed.
- Several lift cards can be packaged into a single paper or plastic evidence container, with the exception of the lifts recovered from clandestine laboratories.

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- Inked elimination prints are prints of those persons having legal access to an area. These prints should be taken and marked as "elimination prints".

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DRUG CHEMISTRY EVIDENCE

INTRODUCTION

The Iredell County Sheriff's Office Crime Laboratory Drug Chemistry discipline is responsible for the analysis of chemical compounds and mixtures, including, but not limited to, controlled substances, clandestine laboratory evidence, select poisons and toxins, and a variety of other types of physical evidence in which chemical and instrumental examinations may be required. Because of the wide variability in the complexity and types of evidence submitted in these cases, a single approach or set of methods and procedures may not adequately address all types of chemical analysis casework. However, for most cases submitted, the procedures listed below are routinely employed by Crime Laboratory personnel. Non-routine cases may require the modification of listed procedures or research into the establishment of new procedures. Should this happen for a particular case, it will be described in the resulting Crime Laboratory report.

CONTROLLED SUBSTANCES

Controlled substance analysis typically involves the qualitative examination of suspected drug evidence to determine if the material does in fact contain a controlled substance, and if so to identify that substance to the exclusion of all others. The Crime Laboratory does not perform quantitative analyses, which is often referred to as the measurement of the purity of a substance or the measurement of the amounts of components in a mixture.

The conclusive identification of a controlled substance is accomplished by the use of a preliminary test in conjunction with a confirmatory analytical technique, which provides molecular structural data about the substance. Together these two tests must lead to the same conclusion and preclude a false positive identification. These techniques include but are not limited to:

- Fourier Transform Infrared spectrophotometry (FTIR)
- Gas chromatography-mass spectrometry (GC-MS)
- Gas chromatography (GC)
- Microcrystalline tests
- Pharmaceutical identifiers
- Ultraviolet Spectrophotometry
- Color tests and microscopy (for marijuana): Leaf marijuana exhibits tend to have characteristics that are visually recognizable. A microscopic examination coupled with the Duquenois-Levine chemical test, provides a basis for the identification of leaf marijuana.

Controlled substances are a major part of the Crime Laboratory caseload. This is physical evidence not only in illegal possession and sale cases, but also in such varied cases as burglaries, traffic fatalities, and assaults.

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For efficiency and accuracy, it is imperative that the evidence be selected, packaged, and forwarded in a careful manner.

Precautions

- Do **not** submit any hypodermic needles, razor blades, or other sharps. Syringes will not be accepted except with management approval. The Crime Laboratory will not accept any case that includes a needle alone, a syringe with the needle attached, or a syringe with the needle removed.

NOTE: The cutting or shearing of a needle from a syringe is completely prohibited by federal regulations.

- Many drugs are very potent, and even minute amounts can present a health hazard. Do not taste or hold the suspect material close to the nose in order to smell it. Do not eat, drink, or smoke while handling the material.
- Be sure to exercise good personal hygiene when exposed to suspected controlled substances by washing the hands thoroughly using soap and water after handling, even if direct contact was not made. Hand sanitizer is not effective in these situations. Use appropriate protective equipment (gloves).
- Small amounts of material must be handled with care to avoid contamination and loss.
- If green or wet plant material is stored in a tight wad or pile, the biological degradation process may generate sufficient heat to produce a fire hazard.

Field Tests

Drug field test kits are **presumptive** tests (i.e., a positive result indicates a possibility that the substance being tested for is present). They are **not** conclusive tests which prove the presence or absence of a particular drug. These kits are useful in establishing probable cause and enabling the investigating officer to obtain a search warrant or an arrest warrant. Some field tests have been shown to give false positive results, indicating the presence of one type of controlled substance when another type is actually present.

If the amount of suspected material is very small, a field test may consume too much of the sample and prevent further testing by the Crime Laboratory. In such cases, it is best not to perform a field test, but to send the material to the Crime Laboratory for analysis.

Do not send the used drug field test kit to the Crime Laboratory—the reagents are corrosive and likely to spill within the packaging; the resultant colors fade and are not recognizable. The Crime Laboratory will carry out a full analysis and will issue a report on the findings for the evidence.

Plant Material

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Plant Materials — Including **Marijuana (Genus Cannabis)** and other plant materials including psilocybin mushrooms, opium poppies, khat, peyote and Spice (synthetic cannabinoids).

Suspected khat (which contains cathinone and/or cathine) should be frozen immediately and delivered to the laboratory in a manner that minimizes thawing. Call the laboratory if you have any questions.

For suspected marijuana and other plant material, completely dry the plant material at room temperature. Fans should be considered if air circulation is poor. When dried thoroughly, place in a paper bag, box, or paper envelope. Avoid loose mesh bags as contents (plant particles and fragments, dirt, etc.) may sift through the mesh holes. Do not place the dried plant material in a plastic container or a plastic-coated container. If not dried and packaged properly, the material may degrade and prevent or interfere with any analysis. Never submit wet plant material in a plastic container.

Also, prior to submission of suspected marijuana, completely remove all roots, residual dirt, and debris. If the investigating officer is comfortable with doing so, remove mature stalks as they will not be included or reported in the weight on the analyst's issued report.

If a large amount of plant material is confiscated, it is not necessary to send all of it to the Crime Laboratory. A representative sample of the plant material should be selected and dried, if necessary, and sent to the Crime Laboratory. Careful notes should be taken as to the total amount (weight) of material confiscated and the amount and locations of the sampling. If there is a question as to how to take a representative sample or the amount of the sample to be collected, contact the Crime Laboratory for assistance.

Solid Dosage Forms and Powders

Solid dosage forms of evidence include pills, powders, tablets, chunky material, tar-like substances, and blotter paper. Drug paraphernalia includes pipes, measuring scales, balances, sifters, bowls, spoons, and a variety of other objects used, or intended to be used, with controlled substances.

- Make sure each item is contained within appropriate packaging before sealing in the final evidence envelope or container. Do not put loose powder, tablets, or any other small or breakable objects directly into the final evidence envelope. At a minimum, the outer packaging should include the case number, item number, officer's initials, and date.
- Make sure the outer envelope or package containing the item(s) is sealed and labeled properly.
- Use the Request for Laboratory Examination, RFLE, Form 4.
 - Make sure to list the items in order of priority (i.e., the order in which you want the items to be examined).

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- Write the item numbers clearly.
- Do not list substances as a particular drug. Instead, list substances as "suspected cocaine" or "suspected of containing heroin."
- Describe any special precautions to be taken, such as biohazards or future latent print examination.

Liquid Samples

Liquid samples include contents transferred from syringes, injectable solutions and steroids, some precursor materials, and other controlled substances.

Liquids should be stored in vials or bottles with secure, non-leaking lids. Teflon sealed vials are particularly recommended. Plastic flip-top vials are good for small quantities. Vials and bottles should be packaged to prevent breaking. As with all other types of evidence, the items should be sealed and labeled properly.

Procedures for Drug Evidence Retrieved from Body Cavities

Drug evidence recovered from anal, vaginal, and oral cavities presents a serious health hazard to both law enforcement and Crime Laboratory personnel. To keep these personnel from being placed in jeopardy, the Iredell County Sheriff's Office Crime Laboratory has instituted procedures affecting law enforcement personnel for dealing with this type of evidence.

Controlled substance evidence removed from a body cavity is usually packaged in some type of protective material, such as a balloon, condom, or plastic bag. Certain steps need to be taken to decontaminate the outside of this container, both to protect personnel from biohazards and to eliminate malodorous decomposing bodily substances.

The following procedures must be used for decontaminating evidence which is packaged as described above:

- Place the evidence (in its protective material) in a container of fresh bleach solution (1 part household bleach and 10 parts water) and soak for at least 15 minutes. Rinse thoroughly with running water. Dry carefully with a paper towel. Place in a clean container and label the container "From Body Cavity" and "Soaked in Bleach Solution". It may be submitted to the Crime Laboratory for examination of the contents. The clean container will not require a biohazard label.
- If it is believed that the wrapped evidence may leak and be attacked by the bleach solution, do not use the above method. If possible, transfer the suspected controlled substance to an appropriate container or call the Crime Laboratory for an alternate procedure.

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- Be sure to note on the laboratory request form AND on the evidence packaging that (1) the item of evidence was removed from, or suspected of being from, a body cavity, and (2) that it was soaked in bleach solution to render it in proper condition for submission.

The clean container will be safe for handling by law enforcement personnel who must come into contact with, transport, and store the evidence. Disposable gloves and other personal protective equipment should be used while handling the contaminated container. Do not contaminate the outside of the clean container.

Controlled substance cases involving evidence found to be removed from a body cavity and not properly processed before being submitted will be returned to the law enforcement agency without further examination.

If there is any difficulty or question regarding the above procedure, contact the Crime Laboratory before processing with the bleach solution.

Disposal of Controlled Substances

The Crime Laboratory does not destroy or dispose of any controlled substances (other than clandestine laboratory evidence as described below) or any other submitted evidence, even if it is determined not to contain a controlled substance. All submitted evidence—except that which was consumed in the analysis—will be returned to the submitting agency.

POISONS/TOXINS

The Iredell County Sheriff's Office Crime Laboratory is not properly equipped to analyze the majority of poison/toxin type cases. The crime laboratory lacks validated procedures and methods of analysis, personnel expertise, safe facilities, and sufficient training for the wide variety of potential toxins, poisons, biotoxins, neurotoxins, and other possible contaminants. Furthermore, these substances may endanger Crime Laboratory staff when accepted into the laboratory.

When cases are received with specific suspected contaminants suggested by the agency, Lab Management will have the authority and flexibility to accept such cases if Crime Laboratory personnel have demonstrated experience and accepted methods for conducting such analyses. Such methods will include those listed above. Agencies should contact the Crime Laboratory with any questions prior to submitting such items. It may be necessary to refer the agency to another laboratory more fully capable of handling these analyses.

GENERAL UNKNOWNNS

General unknowns may require chemical and instrumental analysis. Examination of these types of evidence could include any of the methods or procedures listed above.

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Many of the collection and packaging techniques listed above may be used for general unknowns. Contact the Crime Laboratory if there are any questions concerning the packaging of this type of evidence.

SOLVENTS AND INHALANTS

The Iredell County Sheriff's Office Crime Laboratory is not properly equipped to analyze the majority of physical evidence including solvents and inhalants. The Crime Laboratory lacks validated procedures and methods of analysis, personnel expertise, safe facilities, and sufficient training for the wide variety of potential solvents and inhalants.

When cases are received with specific suspected solvents or inhalants suggested by the agency, Lab Management will have the authority and flexibility to accept such cases if Crime Laboratory personnel have demonstrated experience and accepted methods for conducting such analyses. Such methods will include those listed above. Agencies should contact the Crime Laboratory with any questions prior to submitting such items. It may be necessary to refer the agency to another laboratory more fully capable of handling these analyses.

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CLANDESTINE LABORATORY RESPONSE AND ANALYSIS

Clandestine lab case samples may contain a variety of liquids, solids, pure reagents, reaction mixtures, extracts and waste chemicals.

The North Carolina State Bureau of Investigation (NC SBI) has statewide jurisdiction over the response and analysis of Clandestine Laboratories. Regardless of the county of the suspected clandestine laboratory, the North Carolina State Bureau of Investigation **MUST** be contacted immediately.

CONTACT THE NC SBI CLANDESTINE LAB TEAM

To contact, at any time call your local NC SBI District Office

In special circumstances within Iredell County jurisdiction, and after proper approval from the North Carolina State Bureau of Investigation, the Chemists at the Iredell County Sheriff's Office may respond to the suspected clandestine laboratories instead of Chemists from the North Carolina State Crime Laboratory. It should be noted that even if in the county of Iredell, the North Carolina State Bureau of Investigation **MUST** be contacted immediately and the decision will be made if approval of the use of the Chemist's of the Iredell County Sheriff's Office is requested. If approvals are granted, contact the Crime Laboratory:

CONTACT THE IREDELL COUNTY SHERIFF'S OFFICE CRIME LABORATORY CLANDESTINE LAB TEAM

To contact, at any time call:

Laboratory Director Misty S. Icard – cell (704) 902-2291

Laboratory Quality Assurance Officer Lori A. Knops – cell (704) 902-2055

WAITING FOR NC SBI TO ARRIVE

- Secure the surrounding area. Do not allow anyone to enter.
- Follow any instructions that the NC SBI may provide.
- Treat the clandestine laboratory and surroundings as a crime scene. Any physical evidence—such as tire or foot impressions, fingerprints, records, and vehicles—must be protected for later evaluation and collection.

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GENERAL GUIDELINES

As soon as there are good reasons to believe a clandestine laboratory exists, the investigating officer must not enter the premises. If you have already entered, vacate the area immediately. Do not smoke. Do not turn any electrical switches on or off; leave them as they are. Do not shut off any running water. Do not pour any water on any equipment or material—some chemicals will burst into flame or explode when in contact with water. If equipment is operating or "cooking," leave it as is. Many of the chemicals involved are toxic, flammable, and even explosive. Because a suspected clandestine laboratory potentially contains many chemical and physical hazards, these sites are treated as hazardous material incidents and the safety rules governing their processing will apply. These rules are dictated by Federal Occupational Safety and Health Act (OSHA) and the Occupational Safety and Health Division (OSH) within the N.C. Department of Labor. Only those personnel who are trained and qualified to use personal safety equipment (hazardous material protective clothing, SCBAs and respirators) are permitted to work in this kind of environment. The North Carolina State Bureau of Investigation and the Iredell County Sheriff's Office Crime Laboratory both provide well-trained individuals that have the expertise, equipment, and necessary certifications to handle and process clandestine laboratories.

COLLECTION OF EVIDENCE AT A CLANDESTINE LABORATORY BY THE CHEMIST

On scene, the forensic chemist will provide assistance to the agency and the NC SBI agents in processing the crime scene and selecting items of evidence to take back to the laboratory for analysis.

The collection of evidence by the forensic chemist at a clandestine laboratory focuses on documenting the chemical reagents and chemical hardware present. Samples may be collected from reagents, reaction mixtures, and possibly wastes and residues for later analysis. An inventory of all laboratory related materials will be documented and samples will be selected for analysis. The chemist will evaluate the method of manufacture used and potential production capacities.

In conducting an analysis of clandestine laboratory samples, very little material is actually needed. The only substances that are likely to be collected in their entirety are suspected finished product, suspected precursor chemicals, or other controlled substances. Actual weights or volumes of the materials being sampled are typically recorded. Estimates based on container size (such as "a one quart jar, half full") are usually given. Residues in filter papers may be collected by taking the entire filter paper or a representative number if there are several. All samples will be assigned item numbers by the forensic chemist.

Factory sealed reagents are typically not sampled but will be documented and included in the inventory.

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The forensic chemist will transport all items seized for analysis to the Crime Laboratory, and will assign them an Iredell County Sheriff's Office Crime Laboratory case number. Also, a report titled Technical Field Assistance Report will be issued by the forensic chemist, listing all items inventoried at the crime scene.

The remaining, non-seized items will ultimately be destroyed and disposed of on site by a chemical hazardous waste contractor.

CLANDESTINE LABORATORY CHEMIST ANALYTICAL PROCESSES

Generally, the first step in the analytical process is the identification of relevant chemicals in a sample. In general, a successful chemical identification strategy will utilize the preliminary/confirmatory test approach which will lead to the same conclusion and preclude a false positive identification. The analysis of clandestine laboratory evidence utilizes a variety of instrumentation, including but not limited to GC-MS and FTIR. Additionally, non-instrumental tests such as flame tests, color and precipitation tests, and microcrystal tests will also aid a forensic chemist in the identification and characterization of clandestine lab evidence.

A Crime Laboratory Report, using the same Crime Laboratory number as the Technical Field Assistance Report, will be issued by the forensic chemist which includes the results of chemical analysis of the items seized by the forensic chemist from the crime scene.

SPECIAL NOTE ON HANDLING ANHYDROUS AMMONIA

N.C.G.S 90-95(d2) relates to the possession of anhydrous ammonia for the intent of manufacturing methamphetamine. It is common practice for illicit drug manufacturers to take propane tanks and fill them with anhydrous ammonia. This compound is then used in the production of methamphetamine. Common propane tanks were never intended to store anhydrous ammonia. The fittings around the nozzle of the tanks are readily corroded by this compound, causing potential leakage of ammonia gas.

Proper training and safety equipment are needed to handle and test these tanks. TANKS IN THIS CONDITION ARE A SERIOUS POTENTIAL HEALTH HAZARD.

Disposal of Clandestine Laboratory Evidence after Chemical Analysis

The Crime Laboratory has a contract with a hazardous materials contractor that will periodically dispose of analyzed clandestine laboratory evidence. Usually, this destruction will occur 60 days after the Crime Laboratory report is issued and no further disposition is requested.

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TOXICOLOGY

BLOOD ALCOHOL CONCENTRATION (BAC) EVIDENCE

INTRODUCTION

The Iredell County Sheriff's Office Crime Laboratory provides limited toxicological services to the Iredell County Sheriff's Office by providing the following services:

- Performs toxicological examinations of blood from living individuals who were either the victim of a crime or were suspected of committing a crime in which alcohol may have played a role. This includes North Carolina Driving While Impaired (DWI) laws.
- Provides consultation and interpretation for law enforcement agencies and prosecutors on the Blood Alcohol Concentration (BAC) result.
- Provides expert testimony in court trials, hearings, and depositions.

At this time, the Iredell County Sheriff's Office Crime Laboratory does not have the capability to screen or analyze blood for the presence of controlled or impairing substances (Blood/Drug Analysis). Send to the appropriate forensic laboratory for Blood/Drug examinations (i.e. the North Carolina State Crime Laboratory).

SAMPLE SUBMISSION

Sample Collection Kits

The user agency provides kits for sample collection. The standard kit contains the following:

- Two (2) 10 ml gray-top glass vacutainer tubes for blood collection
- Blood collection needle
- Antiseptic wipe/pad for blood collection
- Plastic bag with absorbent pad
- Inner cardboard box for tubes
- Outer cardboard box for mailing/delivery
- Taper evident tape for blood tubes and outer cardboard box
- Consent form

Return any expired kits to responsible party within agency, including the tubes.

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NEVER submit the vacutainer collection needle or any other needle with the samples. Asking the nurse or phlebotomist to resheath the needle is subjecting him/her to unnecessary risks and is against OSHA regulations. The Iredell County Sheriff's Office Crime Laboratory will not accept any case that includes a needle or a syringe with the needle attached. Similarly, do not submit the Antiseptic wipe/pad or gauze – these are discarded upon receipt.

NOTE: The cutting or shearing of a needle from a syringe is prohibited by federal regulations.

Collection and Submission to the Laboratory

Tubes should be completely filled, wherever possible. Submitting partially filled tubes, or using smaller tubes, may result in partial or incomplete testing. Each test performed requires a minimum volume of blood and the laboratory may not be able to determine the Blood Alcohol Concentration (BAC) if insufficient sample is submitted. In driving-related cases, the laboratory tries to reserve the second tube for the defense if independent analysis is requested.

Not only must the proper collection tube be used but it should always be **inverted 3 to 4 times** after collection to dissolve the container additives in the sample.

Seal the top of each tube of blood with the provided tamper evident tape. All samples must be labeled with the subject's name and agency case number. Initial and date the seal.

Once the sample has been collected, inverted, and properly sealed, initialed, and dated, the tubes should be placed into the inner cardboard box. Use the provided tape to close the inner cardboard box. Place the inner cardboard box into the provided plastic bag that includes the absorbent pad. The absorbent pad is used to absorb fluid in the event of leakage. Next, place the plastic bag that contains the inner cardboard box and blood tubes into the outer shipping/delivery box. Include the completed Consent Form. Seal the box with the tamper evident tape, initial and date. All outer boxes must be labeled with the subject's name, agency case number, and any other pertinent information.

Complete the Request for Laboratory Examination (RFLE), Form 4. **Verify that the subject's name on the request form and the samples are the same.** It is the laboratory's policy to use the name on the specimen when there is a discrepancy.

The request form should be submitted along with the evidence. Do not package the RFLE in the specimen boxes. If practicable, all specimens should be refrigerated until sent. Specimens shall be hand delivered to the laboratory during delivery/pick-up hours noted in the Procedures for Evidence Submission section in this handbook.

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BLOOD ALCOHOL CONCENTRATION (BAC) ANALYTICAL PROCESS

Only analysts possessing a current permit issued by the North Carolina Department of Health and Human Services will conduct BAC analyses. This permit authorizes the analyst to conduct such analyses as a “Chemical Analyst duly authorized to analyze a person’s blood to determine alcohol concentration or presence of an impairing substance therein.”

Blood Alcohol Concentration (BAC) analysis involves the quantitative examination of whole blood evidence to determine if the material does in fact contain ethanol (drinking alcohol), and if so to determine the concentration of ethanol present. The Iredell County Sheriff’s Office uses an instrumental technique called Headspace Gas Chromatography (GC).

An Affidavit and Revocation Report will be generated by the analyst which states the concentration of ethanol present in the units of grams of alcohol per 100 milliliters of whole blood. Example: “The alcohol concentration is 0.06 grams of alcohol per 100 milliliters of whole blood, as defined by NCGS 20-4.01(1b). The identified alcohol is ethanol.”

Disposal of Blood

The Crime Laboratory does not destroy or dispose of any blood specimens, even if it is determined not to contain ethanol. All submitted evidence—except that which was consumed in the analysis—will be returned to the submitting agency.

Revision History Table			
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