

# Guide to Crime Laboratory Services



## Bexar County Criminal Investigation Laboratory San Antonio, Texas

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## **Mission Statement**

The mission of the Bexar County Criminal Investigation Laboratory is to provide the citizens of Bexar County and our customers with comprehensive, impartial, reliable scientific analysis of evidence by experts skilled in the latest technology in Forensic Science as cost effectively and timely as possible without jeopardizing the quality of work, the integrity of the laboratory, or the principles of justice.

## **Vision Statement**

To be recognized as a leader among Forensic Laboratories in providing expert scientific analysis of forensic evidence to support public safety and further the goals of justice.

## **Goals and Objectives**

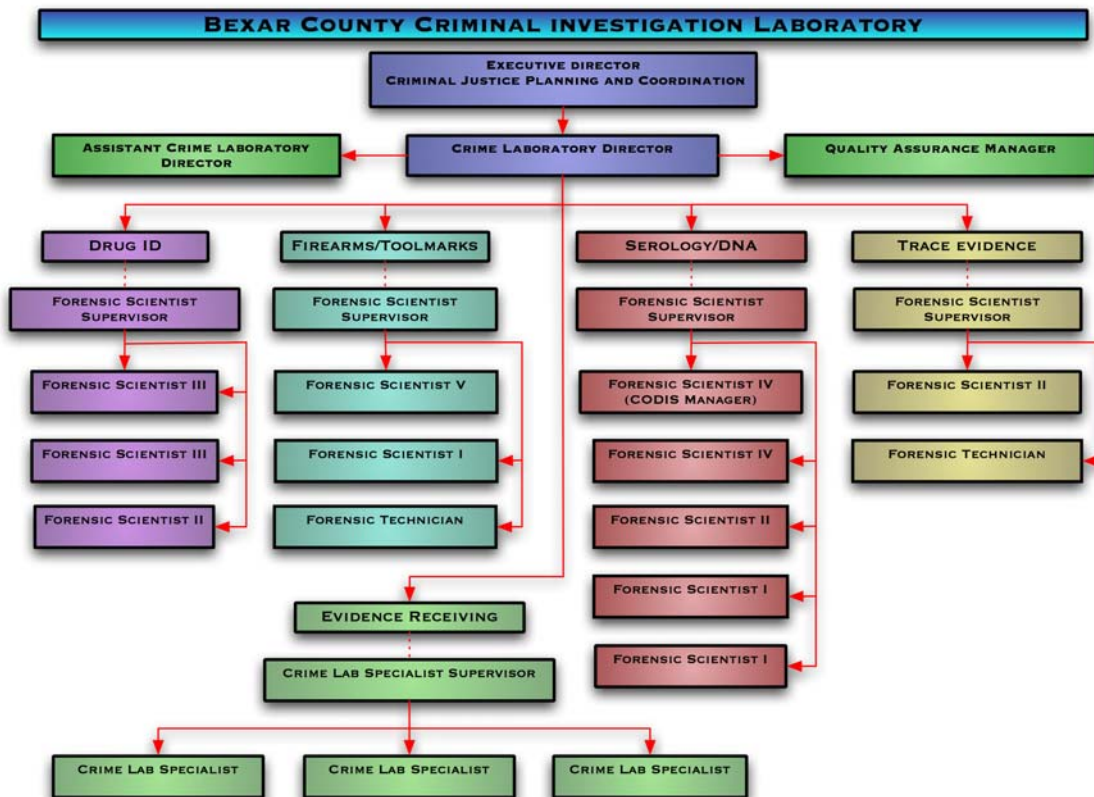
- Increase the number of cases and exams completed each year
- Present impartial scientific findings and opinions to the customer and the Courts
- Provide analytical reports in a timely manner
- Provide cost effective scientific services
- Provide outstanding customer service
- Provide quality services



## Organization

The Criminal Investigation Laboratory (CIL) is an independent, fee-for-service, forensic laboratory operated by Bexar County in San Antonio, Texas. Administratively, the CIL is under the Criminal Justice Planning and Coordination Department, which reports directly to the Bexar County Commissioners Court, the legally responsible entity. The Crime Laboratory (CL) Director manages the CIL operations. For the purposes of administration, the CIL will consist of the following sections:

1. Drug Identification
2. Evidence Receiving
3. Firearms
4. Serology/DNA
5. Trace Evidence



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## Services

### Evidence Receiving

The Evidence Receiving section (ER) is responsible for the intake, secured storage, and release of submitted evidence, as well as, the associated data entry, record retention, and invoicing.

#### **4000 Evidence Clerk Testimony/Hour**

A Crime Lab Specialist (Evidence Clerk) provides testimony as a fact witness in District, State or Federal Court. The Crime Lab Specialist bills for this activity on an hourly basis, port-to-port.

#### **4001 Evidence Registration/Case**

A one-time registration fee for each unique case, which may ultimately include multiple evidence submissions, charged to cover customer relations, data entry, inventory control, and record retention costs.

#### **4002 Shipping and Handling/Case**

A fee charged to cover the labor and shipping costs to release evidence to the submitting agency by returning the evidence through a certified parcel delivery service.

#### **4004 Copy of Report Only**

A fee charged per report copy to cover the labor and materials costs of creating and delivering a paper or electronic copy of an issued report.

#### **4005 Copy of Case Complete File**

A fee charged per case file copy to cover the labor and materials costs of creating and delivering a paper or electronic copy of a case file associated with an issued report, to include the analyst's bench notes.



## **Trace Evidence**

The Trace Evidence section (Trace) examines crime scene physical evidence that is not analyzed by other sections, including fibers, glass fragments, paint, and gunshot and explosive residues. The Trace analyst must often develop unique approaches and combinations of analytical techniques to fully analyze the complex and varied submitted evidence. We strongly recommend that each customer discuss his/her specific requirements with a Trace analyst prior to the submission of the crime scene evidence.

### **4100 Trace Evidence Testimony or Crime Scene / Hour**

A qualified analyst provides testimony as an expert witness in District, State or Federal Court or on-site crime scene consulting including evaluation of physical evidence. The Trace Evidence analyst bills for this activity on an hourly basis, port-to-port.

### **4101 Evidence Search or Removal / Item and Lift**

An analyst and/or technician searches for trace physical evidence, such as, hairs, fibers, glass fragments, gunshot or explosive residues, etc, and removes the trace items by physical methods, including as appropriate, adhesive tape lifts, thoroughly documenting each submitted item with detailed written descriptions. This activity is a mandatory prerequisite for further analyses, and the analyst bills for this activity per item or tape lift.

### **4102 Microscopic Exam-General / Item**

The analyst performs a general microscopic evaluation of trace evidence removed from each submitted item, using Stereomicroscopy and/or Polarized Light Microscopy, limited to documenting the basic physical class characteristics of the recovered trace materials. This activity, which includes microscope slide preparation, written documentation, and certified standards evaluation, may be a prerequisite for further analyses, and the analyst bills for this activity per submitted item.

### **4108 Microscope Comparison / Slide**

The analyst reports the source, origin, and/or identification of collected Trace materials based on the microscopic comparison of known and unknown samples. The customer must provide known samples in order for the analyst to perform these comparisons. In addition, the time consuming nature of these comparisons, which also includes microscope slide preparation, written documentation, and certified standards evaluation, requires that the analyst bill for each microscope slide created.



## **Trace Evidence (Continued)**

### **4112 GC / MSD / Sample**

The analyst reports the identification of organic compounds through Gas Chromatograph / Mass Selective Detector (GC/MSD) analysis, which includes sample preparation, chromatograph and mass spectra evaluation, spectral library search, certified known sample comparisons, qualitative interpretation, and written documentation, and bills per sample or item evaluated. To completely elucidate or identify a submitted sample, the analyst may combine the results of this analytical technique with other available analyses.

### **4113 Analysis by FTIR / Sample**

The analyst reports the identification of organic compounds through Fourier Transform Infrared Spectrometer (FTIR) analysis, which includes sample preparation, spectrograph evaluation, spectral library search, certified known sample comparisons, qualitative interpretation, and written documentation, and bills for this activity per sample or item evaluated. To completely elucidate or identify a submitted sample, the analyst may combine the results of this analytical technique with other available analyses.

### **4114 GSR by SEM-EDX / Stub**

The analyst reports on the identification of Primer Gunshot Residue (P-GSR) by Scanning Electron Microscopy and Energy Dispersive X-Ray Detection analysis, which includes sample preparation, spectral interpretation and evaluation, instrument calibration, and photo documentation, and bills for this activity per each sampling device (stub) submitted.

### **4115 SEM-EDX Analysis / Hour**

The analyst reports on the inorganic elemental chemical composition of trace materials through Scanning Electron Microscopy and Energy Dispersive X-Ray Detection analysis, which includes sample preparation, qualitative/quantitative comparison of the characteristics of known vs. unknown samples, and photo documentation, and bills for this activity per each hour required to evaluate and interpret the analytical results. To completely elucidate or identify a submitted sample, the analyst may combine the results of this analytical technique with other available analyses.

### **4116 Glass Analysis / Sample**

The analyst reports on the determination of the refractive index of a glass sample, which includes equipment calibration, sample preparation, comparison of the characteristics of known vs. unknown samples, and mathematical calculation documentation and bills for this activity per fragment or item submitted. To completely elucidate or identify a submitted sample, the analyst may combine the results of this analytical technique with other available analyses.



## **Trace Evidence (Continued)**

### **4118 Microcrystalline Test or Spot Test / Item**

The analyst reports on the elemental composition of a sample through the evaluation of organic and/or inorganic compound reactions observed by Comparison Polarized Light Microscopy and/or Stereomicroscopy, which includes the comparison of known vs. unknown samples, the comparison of the sample with certified standards, sample preparation, and written documentation, and bills for this activity per item submitted.

### **4119 GSR by Microscopic & Chemical Analysis / Item**

The analyst reports on the identification of Gunshot Residue (GSR) and firearm discharge distance determination, through the chemical detection of characteristic organic and inorganic chemicals associated with the discharge of a firearm, tests which include chemical validation, sample preparation, firing of a submitted weapon at predetermined distances, evaluative comparisons, and written documentation, and bills for this activity per item submitted.

### **4311 Physical Re-Construction / Item**

The analyst establishes and documents an association between an unknown submitted item and a known submitted item collected from crime scenes, through a physical fit / physical match, or reconstruction, which includes photo and written documentation, as well as identification of items submitted, and bills for this activity per item submitted.



## **Serology/DNA**

The Serology/DNA section examines physical evidence collected through medical-legal and/or crime scene investigations to determine the presence of body fluids such as blood, semen, and saliva. The analysts compare the DNA profiles obtained from evidence body fluid stains with the known DNA profiles of submitted known standard samples to identify likely sources of the unknown body fluid stains.

### **4200 Serology / DNA Testimony or Crime Scene / Hour**

A qualified analyst provides testimony as an expert witness in District, State or Federal Court or on-site crime scene consulting including evaluation of physical evidence. The Serology/DNA analyst bills for this activity on an hourly basis, port-to-port.

### **4201 Evidence Search and Processing / Item**

The analyst and/or a technician search and process physical evidence to identify biological material on items of evidence, through visual and/or alternate light source examinations, which include detailed written descriptions and photographic documentation (where applicable) for each item submitted. The analyst reports an inventory of received evidence, the results of analyses, and the disposition of evidence, and bills for this activity per item evaluated. This activity is a mandatory prerequisite for further analyses.

### **4202 Storing Biological Evidence / Item**

The analyst retains samples of physical evidence, activities which include the packaging, preserving, and long term storage of biological materials, to prevent further degradation of the biological material, and bills for this activity per item retained.

### **4203 Presumptive Analysis / Item**

The analyst reports on the presumptive chemical analysis for the presence of blood, semen, and/or saliva, which includes sample preparation, chemical analysis, and written documentation, and bills for this activity per item evaluated.

### **4206 Microscopic Examination / Slide**

The analyst reports on the microscopic examination of evidence extracts for the presence of spermatozoa and other cellular material, an activity which includes sample preparation, microscope slide preparation, and written documentation, and bills for this activity per slide evaluated.

### **4209 Species Determination / Item**

The analyst reports on whether or not biological material is human in origin with immunological testing, which includes sample preparation, use of known standards, and written documentation, and bills for this activity per item evaluated.



## **Serology/DNA (Continued)**

### **4213 P30 Antigen Analysis / Item**

The analyst reports on the detection of a male specific protein with immunological testing, which includes sample preparation and written documentation, to confirm the presence of seminal fluid, and bills for this activity per item evaluated.

### **4214 DNA Analysis / Sample (Core CODIS Loci)**

The analyst reports on the development of a genetic profile at the thirteen (13) core Combined DNA Index System (CODIS) loci through a multi-step process, which includes DNA extraction, human-specific DNA quantification, DNA amplification by the polymerase chain reaction (PCR), and DNA Typing by capillary electrophoresis, followed, where appropriate, by comparisons with genetic profiles of known individuals, a statistical analysis of the results, and profile entry into the CODIS. The analyst bills for this activity per sample.

### **4215 DNA Analysis / Sample (Additional Loci)**

The analyst reports on the development of a genetic profile at loci other than the core Combined DNA Index System (CODIS) loci (i.e., Y-chromosome STR loci) through a multi-step process, which includes DNA extraction, human-specific DNA quantification, DNA amplification by the polymerase chain reaction (PCR), and DNA typing by capillary electrophoresis, followed, where appropriate, by comparisons with genetic profiles of known individuals and a statistical analysis of the results. The analyst bills for this activity per sample.

### **4220 Sexual Assault Evidence Collection Kit**

The analyst reports on the evaluation of a Sexual Assault Evidence Collection Kit for items of evidence probative in a sexual assault investigation and bills for this activity per Sexual Assault Evidence Collection Kit. This activity includes within one fee code the following activities described above: Evidence Search and Processing (4201), Presumptive Analysis (4203), and Microscopic Examination (4206).



## **Firearms**

The Firearms/Toolmarks section (Firearms) examines discharged bullets and spent cartridge cases recovered from crime scenes or at autopsy to determine the origin of the bullets and cartridge cases through comparisons with the discharged bullets and spent cartridge cases obtained from a known firearm. Additionally, the firearms analysts determine the mechanical functionality of recovered firearms and enter bullet and cartridge case images into the National Integrated Ballistic Information Network (NIBIN) database for comparison with similar evidence from other agencies to generate investigative leads. The Firearms/Toolmarks section also performs other specialty test related to firearms and impression marks.

### **4300 Firearms Testimony or Crime Scene / Hour**

A qualified analyst provides testimony as an expert witness in District, State or Federal Court or on-site crime scene consulting including evaluation of physical evidence. The Firearms analyst bills for this activity on an hourly basis, port-to-port.

### **4301 Powder, Cartridge or Bullet Identification / Item**

The analyst reports on the identification of the general class characteristics of gunpowder or cartridges/bullets or the identification of a cartridge / bullet manufacturer through examinations that include stereomicroscopy, general metallurgical composition determinations, weight / diameter measurements, and applicable database inquiries, with appropriate written / photographic documentations. The analyst bills for this activity per submitted item.

### **4303 Microscope Comparison / Item**

The analyst reports on the microscopic comparison of known vs. unknown Firearms Evidence, which includes sample preparation, written / photographic documentation, and inter-comparative analyses. The analyst bills for this activity per submitted item.

### **4304 Mechanical Evaluation of Weapon or Test Fire / Item**

The analyst reports on numerous identified characteristics of Firearms evidence including make, model, caliber, style, overall visual condition, powder deposition, rifling characteristics, deposition of trace evidence, mechanical evaluation of the firing cycle including safety devices, certified measurements of barrel and overall lengths, and ammunition capacity. The analyst will test fire into an appropriate medium, retain test bullets and cartridge cases for future comparisons, and will record and document all findings. Note: For long arm weapons greater than .22 caliber, the analyst must disassemble, download, and reassemble ammunition prior to test fires to avoid destruction of the test fired bullet. The analyst bills for this activity per submitted item. This activity is a mandatory prerequisite for further analyses.



## **Firearms (Continued)**

### **4305 Chronograph or Special Testing / Ammunition or Weapon**

As per special request by a submitting agency, the analyst reports on one or more of the following special tests: calculated velocity measurements of a given type of ammunition, functionality of suppressed firearms, distance determination, incendiary ammunition identification, frangible or armor piecing ammunition determination, ATF class III weapons identification, and knife characteristics. The analysts bills for this activity, which includes any special request testing available within the Firearms section, per submitted ammunition or weapon. Note: Please contact the Firearms section prior to submitting evidence under this service request to ensure that the desired testing is available.

### **4307 Documentation or Photograph / Case**

By special request, the analyst will produce additional documentation or photographs, including those in high-resolution digital format, and bill this activity on a one-time per case basis.

### **4311 Physical Re-Construction / Item**

The analyst reports on the association of two objects along a broken surface by preparing a cast of an object along the broken surface and comparing the cast with another object to determine whether or not they had been joined at that point (fracture match). The analyst bills for this activity per submitted item.

### **4312 Serial Number Restoration / Number Area**

The analyst reports the results of mechanical and/or chemical metallurgical processing of obliterated or altered firearm serial numbers, which includes sample preparation, reagent preparation, chemical validation, and written and photographic documentation. The analyst bills for this activity per number area restored.

### **4314 Repair, Clean or Restoration of Firearm / 0.5 hours**

The analyst disassembles and reassembles damaged firearms prior to any further Forensic analysis. The analyst bills for this activity per half hour. This activity may be a mandatory prerequisite for further analyses to ensure the safety of the analyst and co-workers.

### **4315 Toolmark Replication / Tool**

The analyst reports on the reproduction of impression marks onto suitable test material(s) for each submitted tool. The analyst bills for this activity, which includes sample and material preparation, per submitted tool.



## **Firearms (Continued)**

### **4319 NIBIN Screen / Item**

The analyst or technician will evaluate cartridge casing(s) to determine whether or not suitable marks are sufficient for entry into the National Integrated Ballistic Information Network (NIBIN) database. The analyst bills for this activity, which includes stereomicroscopy visualization, written documentation, and sample preparation, per submitted item.

### **4320 Digital Input and Search / Item**

The analyst or technician enters screened cartridge casing(s) into the National Integrated Ballistic Information Network (NIBIN) database utilizing standardized ATF protocols, which include verification of entry, visualization of returned correlation results, and general evaluation of possible associations of previously occurred offenses. The analyst will bill for this activity per submitted item.

### **4322 Hit Verification / Item**

When presented with a possible NIBIN "hit" (database match), the analyst will report on the verification of the cartridge case / bullet match, which includes contacting all appropriate Law Enforcement agencies to obtain resubmission of evidence items necessary for comparison with the retained test item(s), sample preparation, examination of the evidence items under stereomicroscopy and comparison light microscopy, and written and photographic documentation. The analyst will bill for this activity per submitted item.



## **Drug Identification**

The Drug Identification section (DID) analyzes solid and liquid samples for the presence of controlled substances. To meet accepted forensic standards, the positive identification of a controlled substance requires two positive results from two diverse analytical methods.

### **4500 Drug Identification Testimony or Crime Scene/Hour**

A qualified analyst provides testimony as an expert witness in District, State or Federal Court or on-site crime scene consulting including evaluation of physical evidence. The Drug Identification analyst bills for this activity on an hourly basis, port-to-port.

### **4501 Qualitative Analysis/Sample**

The analyst reports the identification of presumptive controlled substances (other than marijuana) including sample weight determination, presumptive chemical test(s), Thin Layer Chromatography, chemical extraction, and Gas Chromatography/Mass Spectrometry and bills for this activity per submitted sample. This is the standard analysis requested for most submissions. A negative result is reported as "No Controlled Substance Identified".

### **4502 Quantitative Analysis/Sample**

The analyst reports the purity of a controlled substance as a percent of the weight of the sample and bill for this activity by submitted sample. The analyst must first complete a qualitative analysis (4501) of the sample.

### **4503 Identification by Description/Sample**

The analyst reports the identity and dosage concentration of tablets, capsules, and other commercial medicinal preparations using various published drug references and bills for this activity per submitted sample.

### **4506 Marijuana: Bulk Handling/Case**

The analyst weights and collects samples from large bulk seizures of packaged items such as marijuana and cocaine and issues a one-time per case bill for this activity. The analyst must then perform a qualitative analysis on the samples (4501).

### **4507 Marijuana: Qualitative ID/Sample**

The analyst reports the identification of presumptive marijuana including sample weight determination, visual and microscopic examination for biological characteristics, Thin Layer Chromatography, and, if necessary, alkaline chemical extraction and Gas Chromatography/ Mass Spectrometry and bills for this activity per submitted sample. This is the standard analysis requested for most suspected marijuana submissions. A negative result is reported as "No Controlled Substance Identified".



## **Drug Identification (Continued)**

### **4508 Marijuana: Seed Germination/Case**

The analyst reports the viability of recovered marijuana seeds using hydroponics growing techniques to determine whether or not the seeds are non-sterile and issues a one-time per case bill for this activity. Note: This analysis requires additional time since the seeds require approximately 5 days to germinate.

### **4509 Mushrooms or Peyote/Sample**

The analyst reports the identification of biologically derived hallucinogens, such as Psilocin or Mescaline, through a series of specialized chemical extractions and the interpretation of Gas Chromatography/ Mass Spectrometry results and bills for this activity per submitted sample.

### **4514 Hashish/Sample**

The analyst reports the identification of concentrated botanical extracts, such as Hashish and Hashish Oil, through microscopic examination, Thin-Layer Chromatography, and alkaline extraction with Gas Chromatography/ Mass Spectrometry analysis, and bills for this activity per submitted sample.

### **4515 Microcrystalline Test/Sample**

The analyst reports the identification of Red Phosphorus, a component in the production of methamphetamine in Clandestine Labs, using polarized light microscope based microcrystalline tests and bills for this activity per submitted sample.

### **4516 Derivatization/Sample**

The analyst reports on the relative amounts of active and inactive drug manufacturing precursors or controlled substances by specific chemical modification of the sample followed by standard identification procedures, and bills for this activity per submitted sample.

### **4517 Organic Extraction/Sample**

The analyst uses specialized chemical extraction techniques to remove manufactured controlled substances from hazardous liquid samples and bills for this activity per submitted sample.

### **4519 Clandestine Lab Handling (Qualitative)/Case**

The analyst uses specialized handling techniques for the extremely hazardous samples obtained from a clandestine lab when a quantitative analysis is not requested and issues a one-time per case bill for this activity.



## **Evidence Submission Requirements**

### **Evidence Condition and Packaging**

The Evidence Clerks will not accept into the care and custody of the CIL any evidence that fails to meet the following requirements:

All packages, envelopes, bags, boxes, and containers, except containers of convenience, must have a proper seal.

A container is “properly sealed” only if its contents cannot readily escape and only if entering the container results in obvious damage/alteration to the container or its seal. For example, to be considered tape sealed, the evidence item must have an adhesive cellophane, packaging, or Evidence tape completely enclosing, in such a way that an attempt to circumvent a seal can be readily noted, any opening through which the contained items might escape. This could include tape sealing the glue sealed flaps of envelopes and edges of cardboard box flaps. The tape must not be torn or have exposed areas that are no longer adhering to the evidence. Staple closures are not acceptable under any conditions; the sharp metal tines of the staples represent a serious physical hazard to CIL Evidence Clerks and analysts. Heat seals that prevent the escape of contents are proper seals. Evidence, which is sealed with strings, twist ties, glued flaps, or other closures, even if appearing secure, is open evidence if the contents can readily escape. Stopper sealed blood tubes do not require tape seals, even if the tubes contain non-liquid material; however, such tubes should be placed into a secondary container that will contain any spilled fluids.

The Submitting Agent must initial the seal, except for stopper sealed blood tubes.

All packages, envelopes, bags, boxes, and containers, except containers of convenience, must be identified by a submitting agency case number. The agency case number should be written on the item of evidence, although a securely attached evidence tag is acceptable.

All packages, envelopes, bags, boxes, and containers, except containers of convenience, must be identified as to the contents except for items submitted for controlled substance identification and Sexual Assault Evidence Collection Kits.

All packages, envelopes, bags, boxes, and containers, except containers of convenience, must be initialed and dated by the Submitting Agent.

All packages, envelopes, bags, boxes, and containers, except containers of convenience, must be labeled as biohazard or contaminated when blood and/or body fluids may be present.

All packages, envelopes, bags, boxes, and containers, except containers of convenience, must be identified in such a manner as to account for their entirety, such as “1 of 3”, “2 of 4”, “1 of 1”, *etc.*



Each evidence item must be packaged securely to prevent outside or cross contamination.

Large or oversized items for serological and/or trace evidence analysis must be covered or wrapped with thick paper or butcher paper. Rifles and shotguns submitted solely for firearms analysis do not require such outer wrapping. Paper bags and paper wrappings should be intact without tears or rips. Items from the crime scene, the victim, or the suspect, even when packaged separately, must be transported in separate larger bags or boxes.

Evidence items that are wet or moist must be air-dried before packaging. Sealed plastic bags or water impermeable papers are generally unacceptable containers because of the damage that small amounts of moisture can do to evidence. Plastic bags may only be used for suspected controlled substances and as secondary containers for sealed liquid samples (i.e., blood tubes from autopsy or urine specimens) or dried bloodstain cards.

Sharp objects, especially knives and syringes with needles, must be packaged in such a manner that accidental injury will not result from routine evidence handling. This could include, but is not limited to, tightly wrapping the blade of a knife or the needle of a syringe with thick card stock or cardboard. Placing sharp items in Kraft paper envelopes is insufficiently protecting and, therefore, unacceptable. Plastic and Styrofoam should be avoided for the reasons stated in the previous paragraph.

Firearms must be unloaded with no chambered rounds. Live ammunition should be so noted on the submission form.

### **Submission Documentation**

The Submitting Agent will provide the Evidence Clerk(s) with proper personal identification and a completed submission form. (If proper documentation is not available, the Evidence Clerk(s) will give the Submitting Agent a blank submission form to complete.)

The submission form **must** list the following minimum information:

- The Submitting Agency
- The Submitting Agent's printed name and signature
- The complainant's name (**except** Drug ID submissions)
- Suspect's name and Date of Birth (DOB) (Drug ID submissions **only**)
- The Submitting Agency case number
- The name of an investigator or other responsible individual
- An itemized list of the submitted evidence.



### **Operating Hours**

CIL personnel will be available to receive submitted evidence during normal business hours: **8:00 AM to 5:00 PM** weekdays only. The Evidence Receiving section will be closed during all official Bexar County holidays.

Note: The Evidence Clerk(s) will close and secure the Evidence vault no later than 4:50 PM each work day and will receive no evidence after the vault is closed. The Evidence Clerk(s) will turn off the lights and lock the main vault door.

Please contact the Evidence Receiving section at (210) 335-4100 for instructions on submitting evidence after regular work hours.

**For any questions,  
Please Call:  
(210) 335-4100**

**Thank you**