Table of Contents:

- GL-2.1 ~~Laboratory~~ ~~Safety Inspection~~ Safety Checklist
- GL-2.2 Safety Training Checklist (New Employees)
- GL-2.3 Hazardous Waste Storage Area Inspection
- GL-2.4 Satellite Waste Monitoring Checklist
- GL-2.5 Chemical Storage Room Monitoring Checklist

A. PURPOSE:

It is the goal of the Division of Scientific Services Laboratories to provide a safe working environment for all employees. To achieve this goal all employees must adhere to the guidance set forth in the safety manual and work in a safe manner.

The DSS laboratories have specialized safety concerns per specific laboratory units ~~section~~. The safety program addresses these issues and general laboratory safety through the chemical hazard plan, the blood borne pathogens plan and the evacuation plan. Unit specific procedures address safety concerns unique to specific methods.

B. RESPONSIBILITY:

Director: has ultimate responsibility for the ~~laboratory~~ Division's safety program.

Director and Deputy Directors: will provide safe working conditions and the methods of working safely including the provision of all proper PPE. Deputy Directors are responsible for assessing new procedures within their units for specific hazards and assure associated new procedures address needed safety precautions.

Quality Section: will act as the organizing body for safety within the Division. The Quality Manager is designated as the Safety Officer. The Assistant Quality Manager is designated as the Assistant Safety Officer.

~~Laboratory Directors/Commanding Officers: will provide safe working conditions and the methods of working safely including the provision of all proper PPE.~~

Safety Officer: will work to assure safety guidelines set forth in this safety manual are met and will work to improving the safe working conditions ~~of the laboratory~~ when deficiencies are identified or new hazards are presented. The Safety Officer will head the Safety Committee and:

- Promote, plan, and direct a regular program of safety inspections.
- Check for compliance with applicable safety laws and codes.

- Maintain accident records.
- Develop and conduct safety education activities for all levels.
- Insure adequate preventive maintenance programs.
- Establish and maintain emergency plans.
- Be responsible for the maintenance of current safety knowledge.

Safety Committee: will work with the safety officer to maintain and improve the safety conditions ~~of the laboratory~~ specifically in the areas they represent. They will monitor the safety program as it pertains to the specific ~~laboratory~~ areas they represent.

Supervisors/Leads (however titled): are responsible to assure that employees are working in a manner that is safe and consistent with the safety manual and safety guidelines set up in specific unit ~~section~~ SOPs. Must report and work to fix any unsafe working conditions and identify any individual working in an unsafe manner.

Analytical Employees (FSE, Chemists, CCT and Laboratory Assistants – or other appropriate titles): must work in a safe manner following safety guidelines set forth in the safety manual and individual SOPs. All analytical employees must not only work to keep themselves safe but also their co-workers. Analytical employees must report any unsafe working conditions, whether they are building hazards or co-workers working in an unsafe manner.

Evidence Control Officers (however titled): must work in a safe manner following safety guidelines set forth in the safety manual and individual SOPs. All Evidence Control Officers must not only work to keep themselves safe but also their co-workers. Evidence Control Officers must report any unsafe working conditions, whether they are building hazards or co-workers working in an unsafe manner.

Administrative/Clerical Employees: must work in a safe manner following safety guidelines set forth in the safety manual. Administrative/Clerical employees must report any unsafe working conditions or behavior.

C. PROCEDURES:

1. General Safety:

Individuals working at the Department of Emergency Services and Public Protection Division of Scientific Services are exposed on a routine basis to samples that may contain substances that are toxic, carcinogenic, and biologically or otherwise hazardous to humans. The hazard of such samples will vary according to:

a. the nature and concentration of the infecting agent

b. the routes by which the contamination can be transmitted; e.g. respiratory, alimentary, absorptive and
c. the susceptibility of the exposed laboratory worker.

Each specimen should be considered to be a potential hazard and handled appropriately as to protect the analyst or others.

Common routes of contamination include:

- Absorption -certain chemicals and drugs absorb directly through the skin.

- Open cuts or scratches on the skin, particularly the hands, provide a point-of-entry for infectious agents. Penetration of intact skin is possible by some infecting agents and chemicals, while others may enter through the conjunctiva of the eye or other mucous membranes as a result of contact with contaminated hands.

- Direct physical contact by handling wet or dry samples (since *all* physiological stains should be regarded as potentially infectious), as well as the splashing of liquids, are a frequent means of contamination.
- Direct Inoculation
    - Broken glassware, needles, syringes, forceps, and other sharp objects provide a direct means of injection of infecting agents into the bloodstream.
- Vectors
    - Ticks, fleas, body lice, and other ectoparasites on physical evidence are potential sources of contamination.

- Ingestion
    - Smoking, eating, or drinking after handling evidence specimens and prior to hand washing may result in oral ingestion of infective agents or hazardous chemicals.

- Aerosols

- Infectious agents may become airborne through a variety of laboratory procedures and accidents. Proper ventilation or breathing protection is imperative.

<u>General Protective Measures:</u>
Protective measures against a particular infectious agent that may be encountered in the laboratory should be directed primarily against the main route of transmission and against *subsequent* modes of secondary contamination. Because of the dose-response effect, preventive measures should concentrate first on sources from which the infecting dose of the

hazard is likely to be greatest, although these measures must also be reinforced by a general attention to laboratory cleanliness and hygiene.

To minimize exposures, scrutiny of the relative hazards involved with different laboratory procedures ~~and~~ at different stages in the various procedures will be considered ~~conducted~~. Chemical exposures related to reagent usage and evidence handlings are similar to modes of transmission of the biological pathogens encountered. Therefore, most of the recommendations in the guidelines which follow are applicable both to chemical and biological risks, keeping in mind that any combination of the protective measures would be expected to deal with many of the other infection hazards that may be encountered.

The following recommendations are based on the premise that avoiding contamination is largely a matter of organization, housekeeping, personal hygiene, technique and discipline.

Personal Protective Equipment (PPE):
All personal protective equipment is provided at zero cost to the employee.

1. Eyewash and emergency shower stations should be:
    i. Accessible and near area of need
    ii. Plumbed whenever possible
    iii. Paddle operated
    iv. Flushed on a regular basis
    v. Where plumbed eyewashes are not available disposable eyewash solutions will be provided.
2. Safety glasses, goggles and face shields are available to each employee.
3. Laboratory coats are provided to each employee. The use of disposable gowns, aprons or jumpsuit is acceptable.
4. No open-toed shoes are to be worn in the laboratories.
5. A First Aid kit, appropriate to laboratory needs, is readily available in each work area ~~section~~.
    a. Anyone using supplies from a 1st aid kit should report to their safety committee representative when supplies are needed for the kit.
6. Available types of gloves include:
    i. Those which allow tactile sensitivity for routine evidence handling
    ii. Chemical resistant

iii. non-asbestos hot gloves
iv. Puncture resistant gloves

7. Hearing protection is available and worn in compliance with OSHA standards for hearing protection.

General Elements of Safe Operation:

Common to both biological and chemical hazards are key elements of safe laboratory behavior. Though each may be elaborated upon, collectively they form a structure of prudent laboratory operation.

The elements of safe operation include:

- When handling potentially harmful agents, ~~Laboratory~~ DSS staff must wear clean laboratory coats in the laboratory work areas as a barrier. The laboratory coats will be commercially laundered or disposable. Laboratory coats must be removed prior to leaving the laboratory work areas unless the examiner is transporting material from one work area to another. No laboratory coats shall be worn when entering lunchrooms or other areas where food may be consumed. Laboratory coats shall not be worn in the administrative area of the Division.
    - Disposable sleeves are also available to use over lab coats. Disposable sleeves are changed frequently to help protect evidence that will require DNA testing.

- Laboratory coats should not be worn or stored in offices if food is stored or consumed in those offices.

. Safety glasses, goggles or face shields, appropriate to prevent against injury, shall be worn where mechanical, splash, airborne, chemical, or radiation hazard to the eye exists.

. Eye protection against ultraviolet, infrared, and laser radiation shall be worn where applicable.

. When appropriate, facemasks shall be worn when examining evidence. In sections that may share evidence with DNA, ~~laboratory~~ unit personnel will use facemasks to protect the evidence from contamination. Other units ~~sections~~ may find it appropriate to wear facemasks due to the hazard the evidence may cause them. For example, in the Controlled Substance unit ~~laboratory~~, analysts may wear facemasks when handling cases consisting of fine powders so they do not inhale the powder.

. When handling potentially hazardous materials, open cuts or sores should be covered. Gloves shall be worn at all times when handling hazardous materials. The type of glove

used should be specific for the hazard being handled (consult manufacturer's specifications). Gloves must be removed prior to leaving the laboratory work area. Gloves should not be worn when using equipment outside of the work areas (e.g. computers, copiers, etc.).

- It is to be noted that the mt-DNA examiners are required to wear protective gloves while documenting their evidence packaging in order to minimize contamination from examiner to package. These examiners must wear **clean unused** gloves to photocopy the evidence package and remove those gloves when they enter their work area.
- When transporting "work product" in racks from one laboratory room to another DNA analysts may wear gloves. This is due to the need of protecting the samples.

. When gloves are removed, analysts will wash their hands prior to touching common items, such as phones or door handles.

. Avoid touching your face or other unprotected body areas with your hands (or gloves). Hands should be washed frequently to prevent cross-contamination.

. Routinely used micro-utensils and biohazard-contaminated materials (e.g. glassware, utensils, & workstations) shall be sanitized in an appropriate manner. All lab examination areas shall be cleaned with a disinfectant solution or at least a 10% bleach solution, as appropriate. ~~Laboratory~~ Each unit ~~section~~ determines the most appropriate methods for cleaning ~~laboratory~~ equipment, it is suggested that when practical items be submerged in fresh 10% bleach solution for at least 10 minutes. When an item has been used in a manner that it was likely exposed to a biohazard a 10% or 20% bleach solution made daily or a purchased bleach solution with preservative will be used to clean the exposed areas, as appropriate.

. All ~~lab~~ examination areas shall be cleaned with a disinfectant solution or at least a 10% bleach solution, as appropriate.

- Units ~~Sections~~ which handle items that may require DNA testing may use a solution of 10%-20% bleach made daily, a purchased bleach solution with preservative or other appropriate disinfectant.

. Benches and equipment visibly contaminated with biological materials (blood, urine, emesis etc.) will be washed immediately with a disinfectant solution or at least a 10% bleach solution.

- Units ~~Sections~~ which handle items that may require DNA testing may use a solution of 10%-20% bleach made daily, a purchased bleach solution with preservative or other appropriate disinfectant.

. Broken or chipped glassware and scalpel blades shall be disposed of in appropriate containers. Scalpels, contaminated broken glassware and syringes must be disposed of in designated biohazard containers so as to eliminate accidental injury. Broken or chipped glass must be disposed of in glass disposal boxes.

. No sharps or gloves shall be placed in the regular trash. Specially designated containers, which will be sealed and removed periodically from the work area ~~laboratory~~, are provided for all contaminated items of chemical or biological hazards and sharps.

- Sharps (such as syringes with or without needles, razors, broken glass etc) must be placed in puncture resistant leak proof containers.
- Items that may have come in contact with potentially hazardous materials (such as gloves, bench coverings, pipette tips etc.) must be disposed of in biohazard containers.

. When using vortexes or centrifuges, the tubes or chamber should be covered to prevent aerosol contamination. Any spills that occur must be cleaned immediately with a disinfectant solution or at least a 10% bleach solution.

- Units ~~Sections~~ which handle items that may require DNA testing may use a solution of 10%-20% bleach made daily, a purchased bleach solution with preservative or other appropriate disinfectant.

. Where practical, procedures involving airborne or vaporous hazardous substances should be performed in fume hoods. All hazardous chemical spraying shall be done in a fume hood.

. No oral pipetting of any substance is permitted. Avoid placing objects that may become inadvertently contaminated (pens, pencils, toothpicks) into the mouth.

. No eating or drinking is permitted in the laboratory work areas or areas where hazard of contamination exists. No food or implements used for the consumption of food (cups, utensils etc.) will be stored in the analytical areas or in an evidence storage refrigerator/freezer.

. Analytical, clerical, and evidence reception areas subject to evidence contamination must be kept clean and periodically disinfected. All employees in these areas are expected to maintain their own work areas so that they are clean and do not present a health concern or a cross contamination hazard to any evidence.

. In applicable units ~~sections~~, sinks and work areas designated for biological cleanup and sterilization shall have necessary bleach, soaps and cleaning solutions available and cleaned periodically.

- Materials treated with potentially dangerous chemicals shall be well labeled and packaged to prevent contamination by subsequent handlers.

- Any chemical or biological evidence shall be stored or handled with consideration to the hazards they represent as well as their security as evidence.

- Spills will be immediately cleaned and disposed of properly.

- As effects are compounded by exposure, it is recommended that as few employees as are necessary be subjected to potential hazards; therefore:

    - Liquid biological sample analysis rooms are separate from routine analysis areas in the Forensic Biology unit ~~Section~~.
    - Appropriate safeguards for removal of biological hazards will be followed.

- Any employee who detects a possible hazard should immediately report it to the ~~Laboratory~~ Safety Officer or designee for appropriate action.

- Personnel are to be trained to handle chemical and biological materials. Specific training will be part of the unit ~~section~~ specific training SOPs.

2. Biological Safety and Blood Borne Pathogens

Beyond the fundamental safeguards already mentioned are concerns specific to biological threats. This section serves to identify biological hazards and outline additional safety procedures. Blood borne pathogens are pathogenic microorganisms that are present in human blood and body fluids and can cause disease in humans. These pathogens include, but are not limited to, Hepatitis B virus and Human Immunodeficiency virus (HIV). Hepatitis vaccinations are available to all employees of the Division ~~Laboratory~~. It is suggested that all employees have this vaccination; those refusing the vaccine must sign a refusal waiver.

Universal Precautions:

An approach to infection control assumes that all items are contaminated with a blood borne pathogen and should be handled in a manner which prevents the spread of that pathogen. In the DSS laboratories the source of the evidence is not always known. An item which "looks" clean may be contaminated with blood, semen, fecal material or other biological material. Any piece of evidence that may contain biological material shall be considered potentially infectious, and universal personal protective measures should be taken.

- Gloves must be worn when examining evidence which is potentially contaminated with blood or body fluids.

- Masks-and safety glasses/goggles are available for use when there is a threat of blood particles becoming airborne (e.g. scraping down of evidence, vortexing, pipetting, centrifuging).

- Laboratory coats and gloves will be worn while handling all biological fluids and any items/evidence which could be potentially contaminated with biological fluids.

- Vials of blood (whole blood or serum) submitted for examination should be opened in a manner to avoid spraying of the blood or breaking of the glass vial.
  a. A splashguard (tissue or other device) should be placed over the stopper as it is removed. The presence of the tissue will aid in absorbing any spray that may occur.
  b. Blood samples can be examined in hoods when appropriate to do so. The use of hoods does not preclude the use of other appropriate PPE.
  c. Available PPE (personal Protective Equipment) include:
     - Puncture resistant gloves
     - Goggles
     - Face shields
     - Physical barriers (Plexiglas counter top shields)
     - Facemasks

- Any areas of the body (other than eyes) that have been exposed to potentially infectious blood or body fluids should be thoroughly washed with soap and water. If a biological fluid splashes in the eyes, flush using an eyewash. The individual should notify the ~~Laboratory~~ Safety Officer of any exposures that occur.

- ~~Laboratory~~ Work areas and equipment (bench tops, pipettes etc.) exposed to blood or other bodily fluids will be washed with a disinfectant solution or at least a solution of 10% bleach. Note: 10% bleach solutions need to be made within 24 hours of use to be fully affective.

- Areas that work with biological fluids will have a plan in place for disinfecting work areas on a regular basis.

<u>Other Biological Hazards:</u>
Improperly dried plant materials submitted for analysis may contain *Aspergillus* molds. These molds are a common environmental contaminant; however, some species are known to cause

diseases in man. Analysts working directly with plant materials that appear moldy may choose to wear facemasks to minimize exposure.

3. Chemical Hazard Plan:

A variety of chemicals are used within the DSS laboratories. These can range from acids, bases and solvents to drugs and poisons. Some evidence may also be in chemical form such as with arson or poisoning cases. All chemicals must be handled in a safe manner to avoid exposures or cross-reactions.

General Chemical Hygiene:

All chemicals will be handled in a safe manner. MSDS/SDS sheets will be maintained in the library area for all chemicals purchased by the Division ~~laboratory~~. Additionally the shared drive contains a scanned copy of all MSDS/SDS (File name MSDS Documents). Within the file there is a hyper linked spread sheet listing each chemical. Clicking on the hyperlink leads the user to the MSDS/SDS. Whenever possible the chemicals will be stored in a manner consistent with the storage guidelines in the specific MSDS/SDS.

Safety guidelines must be followed when working with chemicals. Employees that are unsure of how to safely work with a specific chemical should contact their supervisor/lead or the Safety Officer. General Safe handling of chemicals includes:

- Wear Laboratory coats
- Wear appropriate gloves, not all gloves are appropriate for all jobs. Consider:
  - Type of chemical being used
  - Prolonged exposure to the chemical v. incidental exposure
  - Do you need gloves to protect from cold for liquid nitrogen use
- Wear eye protection when there is the possibility of violent reactions or splashing
- Store chemicals properly
- Store chemicals at eye level or lower
- Understand chemical incompatibility

Precautions for Chemical Handling:

Handling and Weighing:

Dangerous or hazardous chemicals as identified by the NFPA label or GHS label should be weighed and handled according to the following procedures:

1. Wear proper gloves and, if appropriate, a particle mask.

2. Minimize exposure in weighing procedure.

3. Open reagent bottles at arm's length, angled away from the face.

4. Store chemicals in close proximity to balance and return them to their storage area immediately after use.

5. Use disposable weighing papers and/or boats, and discard into lined wastebasket after use and rinsing.

6. Balances and work surfaces should be cleaned immediately after weighing. Utensils should be cleaned immediately after use.

Reagent Usage:

Analyses should be performed under appropriate ventilation. Reagents routinely used in the hood in small quantities may be stored there, provided they do not clutter the work surface or impede airflow. The use of personal protective devices should be considered. Rubber droppers should be inspected periodically and replaced as needed.

Liquid Nitrogen:

When handling liquid nitrogen, safety goggles and lab coats should be worn. When prolonged exposure to liquid nitrogen is likely, for example dipping evidence, appropriate gloves should also be worn.

Hazardous Storage Precautions:

This section serves to identify hazards and outline additional safety procedures. Potential hazards and their nature and storage are listed below. Prior to using any chemical or hazardous substance, the examiner will review the MSDS/SDS sheets and manufacturer's recommendations for the use, storage and disposal of the material.

The quantity of toxic chemicals stored should always be kept to a minimum. For storage of solvents, the area shall be well ventilated and kept cool. Chemicals that react to produce toxic by-products must not be stored in the same area. Flammables, acids, and water-reactive substances are examples of special storage problems (see "Incompatible Chemicals").

Chemical storage areas must be kept free of clutter. Whenever possible items not related to chemical use will not be stored with the chemicals.

1. Biohazards - acute or chronic health hazards other than carcinogens e.g. poisons, irritants, etc.

2. Carcinogens - mutagenic (agents which can induce a genetic mutation) and teratogenic (agents which are able to disturb the growth and development of an embryo or fetus)

A. It is realized that it is sometimes necessary to store and use known carcinogens in the laboratory. This should be kept to a minimum.

B. Probable agents, such as o - tolidine powder, should be stored and handled so as to reduce exposures.

3. Corrosives - Caustic agents, acids, bases, oxidize agents.
4. Acids, bases:
   Concentrated acids and bases should not be stored together or in the presence of other organic and inorganic chemicals. Many units ~~laboratories~~ have chemical storage areas within the work area ~~section~~ (solvent cabinets, acid cabinets) for proper chemical storage.
   Corrosive liquids: should be stored in an area that is cool but maintained above the freezing point of the chemical. This area should be dry and well ventilated.
   Acids: should be stored in acid cabinets separate from the hydrocarbon solvents.

5. Oxidizing Agents:
   The storage area for strong oxidizing agents is fire - resistant (shelving included) and cool. The floor of the storage room is fire resistant, watertight, and without cracks in which these materials can lodge. Oxidizing agents are not stored in the same area with any fuel such as: flammable, organic chemicals, dehydrating agents, or reducing agents. Oxidizing agents should be stored in a flammable proof cabinet in the chemical storeroom. Any spills in the storage area are cleaned immediately.

6. Explosives:
   Storage facilities for explosive chemicals are well identified and isolated from other chemicals. The type of storage area required depends upon the particular chemical and the quantity stored. Explosive chemicals will be stored in a vented cabinet in the chemical storeroom. For the proper storage methods of these chemicals, see the MSDS sheets. If explosive standards or pure explosives are to be kept in the laboratory, the necessary quantity maintained shall be kept at a minimum.

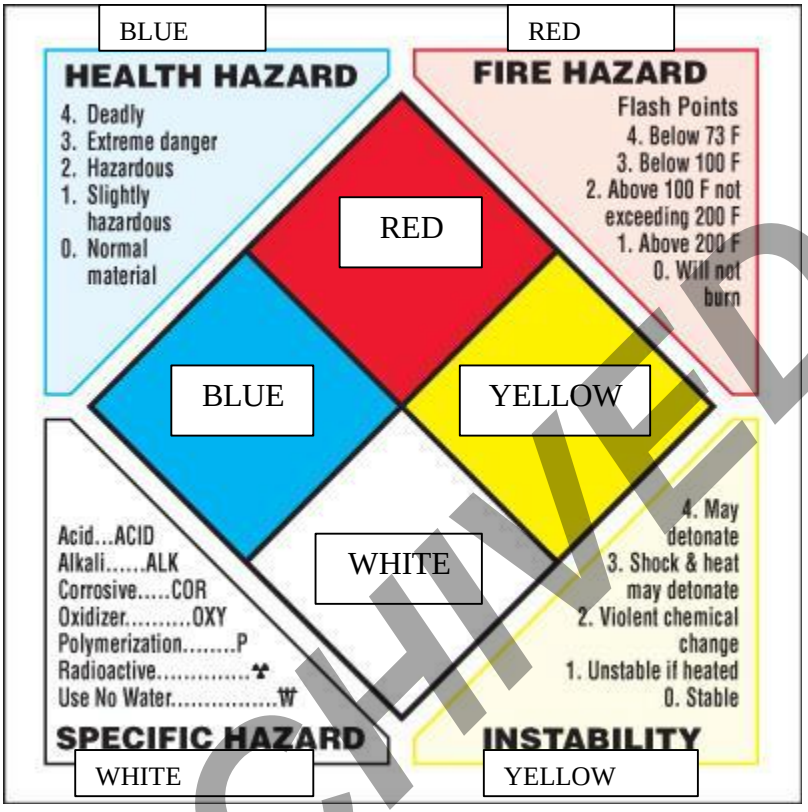
7. Flammables:
   Flammable liquids in quantities greater than four (4) liters are stored in metal safety cabinets in the individual laboratories or basement explosion protection room. Working stock solution will be stored in unit work areas ~~laboratory sections~~. Solvents (Hydrocarbon, chlorinated): excess quantities should be stored in storage cabinets in the chemical storeroom.

Chemical Labeling:

Information needed to apprise the analyst of the chemical hazard shall be on every chemical storage container. MSDS are available

1. Regulations require that chemicals be labeled as to hazards. If chemicals are stored in other than the original containers, they are labeled as to identity *of the contents and the associated hazards*.
   a. Name of Chemical (common)
   b. Date prepared
   c. Prepares initials
   d. NFPA (National Fire Protection Association) label
      Note: As the national change to the GHS system occurs it is acceptable for GHS pictograms to be substituted for the NFPA label when the NFPA information is not provided.

Explanation of NFPA label



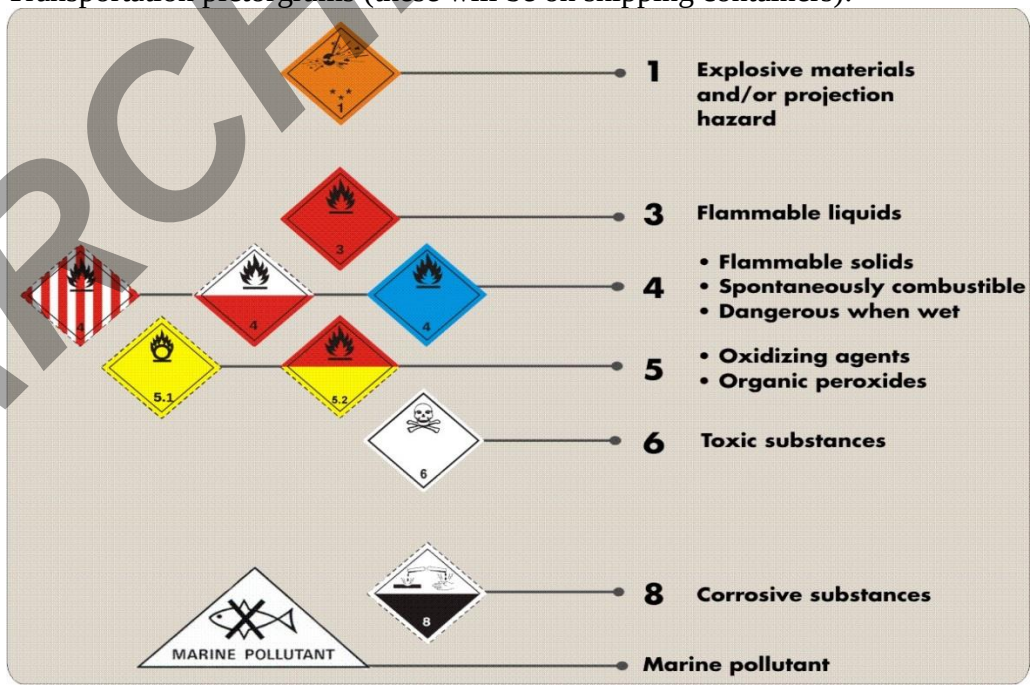
e. Solvents or other chemicals that are transferred from a larger stock bottle to a working bottle must be labeled with the chemical name, date filled, manufacturer's lot number, analyst's initials and appropriate NFPA label. In cases were a reagent/chemical is dispensed into numerous single use containers (such as test tubes) the group can be labeled with one label, such as on the container holding the group of aliquots.
   i. Purchased solvents, chemicals or reagents must be labeled with the date of receipt.
f. Solutions prepared, used and discarded in the same day are only required to be labeled with the identity of the solution.
g. Individual units ~~sections~~ may require additional information on the reagent, such as expiration date, this is unit ~~section~~ specific and will be addressed in the specific ~~section~~ unit SOPs.

2. Global Harmonized System (GHS) of labeling: this system part of the OSHA communication program. Manufacturers of chemicals are transitioning to this labeling system. The following is provided for ~~laboratory~~ users of chemicals to understand the labeling system.
a. Manufacturer's Labels are required to contain the following information:

i. Product Identification: this is simply the common name, trade name, or chemical name of the product
ii. Pictogram: there are 9 standard pictograms. These will always be a red diamond on a white background. Multiple pictograms will commonly be on a single label.

1.  Indicates an explosive, self-reactive or organic peroxide type substance
2.  Indicates flammable, self-reactive, pyrophoric, self-heating, or a substance that emits a flammable gas.
3.  Oxidizers, while in itself not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material.
4.  Gas under pressure
5.  Corrosive
6.  Acute Toxicity

7.  Irritants, Dermal sensitizers, acute toxicity, narcotic effect, respiratory tract irritant
8.  Health Hazard, respiratory Sensitizer, Reproductive Toxicity, Target organ toxicity, Mutagen , Aspiration Toxicity
9.  Environmental Toxicity
10. Transportation pictorgrams (these will be on shipping containers):



iii. Signal Word: There are 2 signal words.

1. Danger: Indicates a more severe hazard.
2. Warning: Indicates a less severe hazard.

iv. Hazard Statement: hazard statements are standardized and assigned phrases that describe the hazard(s) as determined by hazard classification. An appropriate statement for each GHS should be included on the label for products possessing more than one hazard.

1. **Physical Hazards**:
    a. Explosives
    b. Flammable Gases
    c. Flammable Aerosols
    d. Oxidizing Gases
    e. Gases Under Pressure
    f. Flammable Liquids
    g. Flammable Solids
    h. Self-Reactive Substances
    i. Pyrophoric Liquids
    j. Pyrophoric Solids
    k. Self-Heating Substances
    l. Substances which, in contact with water emit flammable gases
    m. Oxidizing Liquids
    n. Oxidizing Solids
    o. Organic Peroxides
    p. Corrosive to Metals
2. **Health Hazards:**
    a. Acute Toxicity
    b. Skin Corrosion/Irritation
    c. Serious Eye Damage/Eye Irritation
    d. Respiratory or Skin Sensitization
    e. Germ Cell Mutagenicity
    f. Carcinogenicity
    g. Reproductive Toxicology
    h. Target Organ Systemic Toxicity - Single Exposure
    i. Target Organ Systemic Toxicity - Repeated Exposure
    j. Aspiration Toxicity
3. **Environmental Hazard:**
    a. Hazardous to the Aquatic Environment
        i. Acute aquatic toxicity
        ii. Chronic aquatic toxicity

1. Bioaccumulation potential
2. Rapid degradability

v. Precautionary statement: precautionary information supplements the hazard information by briefly providing measures to be taken to minimize or prevent adverse effects from physical, health or environmental hazards. First aid is included in this statement.

vi. Supplier Identification: the name, address, and phone number of the manufacturer or supplier of the product.

Material Data Safety Sheets (MSDS) or Safety Data Sheets (SDS):

b. Material Data Safety Sheets are documents that contain information and instruction concerning chemicals; these are used to comply with OSHA's Hazard Communication Standard.

c. MSDS are under the Globally Harmonized System are now referred to as SDS (Safety Data Sheets).

d. SDS are required to contain 16 specific headings.

1. Identification
2. Hazard(s) identification
3. Composition/information on ingredients
4. First-aid measures
5. Fire-fighting measures
6. Accidental release measures
7. Handling and Storage
8. Exposure controls/personal protection
9. Physical and chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information

e. Copies of MSDS/SDS are maintained in the library by the Safety Officer. It is suggested that each unit ~~section~~ maintain a copy of SDS for chemicals used within the unit ~~their section~~. Alternatively MSDS/SDS sheets are also saved on the Shared Drive in a folder labeled MSDS Documents.

Incompatible Chemicals:

The hazard of accidental mixing of non-compatible chemicals or chemicals which may generate a hazardous by-product is basic to any chemical laboratory. Substances in the left hand column below are examples of those that are stored and handled so they cannot accidentally contact corresponding substances in the right hand column under uncontrolled conditions, as violent reactions may occur. If there is a question as to the proper storage of a chemical, the MSDS should be consulted. These examples are not all inclusive.

Chemical:	**Caution with:**
Acetic acid	Chromic acid, nitric acid, hydroxyl-containing compounds, ethylene glycol, perchloric acid, peroxides, and permanganates
Acetone	Concentrated nitric, sulfuric and chromic acid mixtures
Ammonia	Mercury, chlorine, calcium hypochlorite, iodine, bromine, hydrogen fluoride and hydrochloric acid
Chromic acid	Acetic acid, turpentine, alcohol, other flammable liquids, nitric acid, silver salts, photographic chemicals
Hydrocarbons (benzene, butane, propane, gasoline, turpentine, etc.)	Fluorine, chlorine, bromine, chromic acid and peroxide
Nitric acid (conc.)	Acetic acid, acetone, alcohol, aniline, chromic acid, flammable liquids, flammable gases, and nitratable substances such as glycols
Strong Oxidizers (H2SO4)	Chlorates, perchlorates, permanganates

Hazardous Waste Disposal

The following are rules for hazardous waste disposal supplied by the Connecticut Department of Energy and Environmental Protection.

- Conditionally Exempt Small Quantity Generator Handbook for Hazardous Waste Handlers, March 2009
- A Road Map to RCRA Small Quantity Generators (SQG) Requirements/Guidance Manual, September 2009

"Satellite" waste accumulation areas are monitored weekly; a Satellite Waste Storage sheet is maintained at each site. This is completed by a ~~section~~ Safety Committee member or an individual designated by the Deputy Director ~~section Supervisor~~.

- The Satellite Waste storage sheets are maintained within the unit ~~section~~ for the calendar year and forwarded to the Safety Officer at the end of the year.

Container Specifics:

1. Must be free of cracks, rust, holes and dents.

2. Must be compatible with the materials being stored.
3. Must be closed unless you are physically adding or removing waste.

Marking and Labeling Requirements:

1. Must be marked with "Hazardous Waste" and other words to describe the waste, such as the chemical name and warning statement.
2. Generator's name and address
3. Date the container is full (accumulation start date)

Hazardous Waste Storage Area is where the majority of wastes are stored on-site prior to disposal.

1. Containers must be stored on a sufficiently impervious surface.
2. Containers must have secondary containment of either 10% of the total volume of waste in the area or the volume of the largest storage container in the area, whichever value is greater.
3. Containers of incompatible waste must be segregated in a fashion that would prevent mixing of waste in the event of a container release or spill.
4. The hazardous waste storage area is inspected monthly.
5. Hazardous waste in this storage area should be disposed of through a Hazardous Waste Disposal Company approximately every 6 months.

Satellite Accumulation Area (point of generation – POG) is to provide for the day-to-day management of hazardous waste.

1. Each container must be located in an area at or near the point of generation.
2. Each container must be under the control of the operator of the process generating the waste.
3. Once the container is full, the accumulation start date must be written on the label and the container needs to be moved to the Hazardous Waste Storage Area.

Spill Control:

Spills must be anticipated and planned for since the laboratory environment necessarily involves the handling of hazardous substances. In some cases, the material, if spilled and improperly handled, can represent a significant threat to the health and safety of Division ~~the laboratory~~ staff. Caution should be taken in cleanup procedures. For any type of chemical spill, gloves, puncture resistant gloves, particulate air masks, aprons or laboratory coats are available for use as needed.

. Degree of Hazard:

The degree of hazard involved in any particular spill will be directly related to:

1. The product's identity (e.g.: sucrose vs. benzene)
2. The quantity involved (e.g.: 50 ml vs. 500 ml vs. 5 L)
3. The physical form of the product (e.g.: dry powder vs. liquid)
4. Where the spill has occurred (e.g.: near an ignition source vs. in the hall vs. under a fume hood)

- It will be up to the employee to use good judgment in assessing the spill- employees also share the responsibility for co-worker's health and safety. Remember the spill of a few milligrams of a drug which absorbs through the skin can be as significant as the spill of a 4L bottle of methylene chloride.

- Preparing for a Spill:
  Know the location and identify all the chemicals in your work area.
  . Know the location of the spill kits in your work area
  . Determine from information provided in the MSDS/SDS which chemicals are hazardous and present health and safety threats.
  . Minimize the chance for a major incident by working with the smallest quantities possible. Be particularly careful when transporting chemicals between storage areas and your work areas.
  . Chemicals stored in the 1st level storage room should always be transported with the use of the elevator and a cart when possible. Do not carry the bottles up/down the stairs.
  . Always work with dry hands.
  . When flammables are involved, identify sources of potential ignition in your work area.
  . Aside from fire danger, consider the health hazards associated with inhalation or skin contact.
- Locate and identify the correct spill clean-up materials and the proper personal protective equipment. (Remember, in a spill situation, you could exceed established permissible exposure limits if you're breathing vapors without having sufficient respiratory protection. Isolation of the spill, evacuation of the area and allowing experts to clean the site may be the best option.)

Spill Kits:
Spill kits are available to clean up specific chemicals in the laboratory work areas. It is the employee's responsibility to know the location of emergency equipment in their assigned areas. Always be aware of what chemicals are used and the specific spill kits available in the laboratory.

Responding to a Routine Spill**:**
Evaluate the spill; a routine spill is a spill situation in which there is no immediate threat to life.

1. Immediately inform someone else in the area about the spill so someone else is aware of the spill besides you.
2. Take steps to prevent the spill from spreading, if it is safe to do so.
3. Proceed with the cleanup, making use of the MSDS information and using properly

selected spill cleanup materials and personal protective equipment. If you need help in cleaning up a spill, call for a supervisor/lead or co- worker to assist you. If time permits, get notification of the incident to the ~~Laboratory~~ Safety Officer and/or the ~~Laboratory~~ Director for help.

4. Report any major spills to the safety officer, once it is safe to do so.

Responding to an Emergency Spill:

An emergency spill is a spill situation in which there is an immediate threat to life.
If the spill involves a flammable solvent in significant quantity to pose a threat of fire, pull the nearest fire alarm box and direct evacuees away from the spill area. If a spill of a hazardous chemical occurs and you are not sure that you can immediately neutralize any potential health or safety threat to you or your co-workers, you should immediately:

1. Call your supervisor/lead, the ~~laboratory~~ Director or safety officer for help, advise them that an emergency spill has occurred, and identify the spill area.
2. Extract any injured persons from the area, if this is possible without a significant risk to your own life.
3. Evacuate yourself and others from the spill area or building, or keep others away from the spill area until help arrives, as the situation warrants.
4. If possible retrieve the MSDS to aid in the control and cleanup of the spill.
5. Above all else, remain calm, use good judgment, and don't hesitate out of embarrassment to protect yourself and co-workers from injury or worse!
6. Report the incident to the safety officer so that proper procedures can be followed. (This can wait until after the situation is under control.)

When a chemical spill occurs:

- **Remember do not endanger yourself or your fellow employees in an attempt to clean a spill. If you have any questions as to the proper clean up or disposal procedures contact your supervisor/lead.**
- Always wear personal protective equipment when dealing with a spill. (laboratory coats, gloves and protective eyewear
- There are several products available for chemical spill clean ups. It is important that the manufacturer's guidelines are followed for these products. If you do not understand the instructions set by the manufacturer or are unable to locate the instructions contact your supervisor/lead.
- Commercially available Spill Kits include:

1. Acid Kits
2. Caustic Kits

3. Solvent Kits
4. Mercury Kits
5. Biological Kits (blood/urine/emesis)
6. Spill Control Pillows

All spill kits come with instructions that must be followed. If you do not feel comfortable cleaning a spill, call your unit ~~section~~ supervisor/lead.

Chemical Exposures:

1. If exposure occurs, individuals may react differently. Acute symptoms require emergency medical care. Chronic symptoms may not be obvious immediately, but may linger for hours, and possibly days.

2. In the event of chemical contact, flush the area with cold water. The recommended time is fifteen minutes.

3. Receive immediate medical care when appropriate.

4. Abnormal exposures should be reported to, and recorded by, the ~~Laboratory~~ Safety Officer. The ~~Laboratory~~ Safety Officer will document and report such incident according to established departmental employee injury guidelines as stated in the A & O manual (section 4.12.8).

4. Instrumental and Mechanical Hazards:

Fundamental Guidelines:

Essential to the operation of any laboratory device in the Division ~~Forensic Laboratory~~ are the following fundamental guidelines:

1. Operational and safety lessons will be provided to employees as part of ~~their~~ training within the unit ~~section~~ regarding the use of DSS laboratory provided equipment. The manufacturer, the supervisor, or another previously trained examiner will provide these lessons.

2. Personnel will be allowed to use equipment after it has been determined by the appropriate supervisor/lead that the employee is familiar with the equipment, its operation, safety features, and inherent hazards.

3. No alteration of manufacturer's safety features is allowed.

4. Periodic safety inspections are performed to identify any hazard(s) that might develop: e.g.: worn cords, broken cords, broken groundings.

5. All electrical units must be grounded or double insulated.

6. Qualified personnel must perform all maintenance.

7. Compressed gas cylinders shall be stored properly.

8. Cylinders, lines, valves, and regulators should be routinely inspected for leaks, unsafe mounting or other hazardous conditions.

Specialized Equipment:

General considerations of ventilation, radiation shielding, training, and awareness of hazards are augmented by the following concerns:

1. Electrical cables should be protected from flooding and mechanical damage to guard against shock hazard.

2. For high vacuum systems not otherwise implosion-protected, shielding should be placed to guard against implosion.

3. Water cooling systems are to be installed in compliance with manufacturer's recommendations and periodically inspected.

Microscopy:

Instruments should be periodically inspected to insure that light levels or wavelengths are not used which could be damaging to vision.

Lasers/Alternative Light Sources:

As the type and intensity of lasers/alternate light sources may vary widely, as well as the environment in which it is being used, these following general guidelines shall be adhered to:

1. Insure proper installation to reduce shock hazard.

2. Never look directly at the beam or allow specular (mirror-like) reflection.

3. Never view the beam pattern directly.

4. Wear goggles that provide protection for the wavelength of the laser/alternate light source used.

5. Rubber matting is provided, when appropriate, when working with high voltage equipment and/or external power sources.

Miscellaneous Equipment:

1. Floodlights, enlargers, film processors, TV, cameras, and monitors.
   A. Thermally insulated light bulb sockets are to be used where floodlights are employed.

   B. Electrical film processors should be properly grounded and run with suitable electrical shielding.

   C. Ties or similar apparel shall not be worn around machines with moving parts, i.e. photographic processors.
2. Steam irons, illuminators, optical comparators, video monitors.

   Periodic inspections should be performed to identify hazardous power lines, cords, or any other electrical hazards that would result in shorting or fire situations.

3. Serial number restoration equipment.

   A. Equipment should be used only when properly grounded and equipped with a current-limiting device, such as a fuse or series resistor to prevent accidental shorts from overheating the power supply.

   B. Serial number restorations should be conducted only where ventilation exists.

Mechanical Hazards of Firearm Handling:

General Safety Procedures:

1. All firearms being submitted or handled shall be unloaded and rendered safe. Weapons being submitted for examinations by a unit ~~section~~ other than the Firearms unit ~~Section~~ will be checked by a firearms examiner prior to transporting the weapon from the receiving area (Evidence Receiving SOP ER-1 C-11 "General Considerations" & CW-I-14 "Retrieval, Storage, Analysis and Return of Evidence"). Any weapon being transferred from Firearms to another unit ~~section~~ will be rendered safe according to the protocols set forth in the Evidence Receiving SOP ER-1.
   - Always assume a weapon is loaded and handle accordingly.

2. No firearms should be loaded in the ~~laboratory~~ facility except in defined test-firing areas, when in the care and custody of a member of the Firearms unit ~~Section~~. (Exceptions are made for the firearms of sworn personnel)

3. No firearm will be pointed at or in the direction of another person.

4. Any problems or doubts concerning the safety of the firearms should be brought to the attention of an experienced firearms examiner. If doubt exists as to the safety of direct firing, a remote-firing device should be employed when one is available. Lightweight body armor and face shields should be used in situations where bullet/gun fragments may be deflected towards the shooter or observers.

5. All personnel who conduct test-firings should be instructed in a course in the proper handling of firearms. Evidence of training shall be submitted to the ~~Laboratory~~ Safety Officer.
6. A remote firing device is available for test firing questionable firearms.
7. Any problems or doubts concerning the safety of the firearms should be referred to the ~~section~~ unit lead/supervisor or the Deputy Director.

Test-Firing Safety-Tank and Range Area:

1. All test firing should be conducted in the proximity of another person whenever possible. No test firing shall take place when the examiner is alone in the building (e.g. after hours, weekends, etc.) Notice of firing will be given to others in the building during off hours.

2. All personnel in a test-firing area shall wear safety glasses and hearing (ear) protection.

3. Non-authorized personnel or interns shall not discharge firearms within the ~~Laboratory~~ Division's range and tank room.

4. Test firing for other than case and/or ~~Laboratory~~ Division related purposes will not be conducted. No recreational shooting shall take place in the Divisions ~~Laboratory~~ range.

5. Weapons from the ~~Laboratory~~ reference library shall not leave the Division of Scientific Services facility ~~Forensic Science Laboratory~~ without prior permission of the ~~Laboratory~~ Director.

6. Appropriate signs (**warnings**)-A flashing warning light is activated when the test fire tank or firing range are in use.

7. When test firing weapons, during normal business hours, the doors to the range and tank room shall remain closed and secure.

8. During non-business hours or weekend use, the outer door of the range leading to the hallway area will remain unlocked while in use.

9. During non-business hours, the inner door of the tank room, inner door of the firearms evidence room and outer door to the firearms examination area will remain unlocked while occupied.

10. Keys allowing access to the range and tank test firing areas are limited to personnel assigned to the Firearms unit ~~Section~~, Deputy Director and other personnel as deemed necessary by the individual responsible for security.

11. Check the bore of the firearm for obstruction prior to loading.

12. All test firearms should only be loaded in the test-firing areas. The muzzle of all firearms must be pointed down range or towards the water in the tank (downward within the tank) when being made ready for test firing.

Lead Vapor/Particle Contamination:

1. In outdoor test-firings, the prevailing wind should be in the direction of discharge and away from the shooter's face.

2. During indoor test-firings, the air exhaust system must be on to remove the discharge residue from the shooter's face. Ventilation should be adequate to reduce exposure to permissible levels.

3. If no suitable ventilation is available in inside areas, then the shooter and observer will need a nose and mouth mask for toxic particles.

5. Fire Safety:

The Division of Scientific Services ~~Laboratories are~~ is equipped with a fire alarm system which includes hard wired smoke detectors, a sprinkler system and direct notification to the local fire department, ~~ADT~~ the contracted alarm company and DESPP communications when the fire alarm or panic button is triggered. Illuminated Emergency Exit signs are located by all external exit locations.

Firefighting equipment available throughout the Division ~~laboratory~~ includes:

- Appropriate fire extinguishers
- Fire blankets

Evacuation Plan:

Fire Alarm:

- When a fire alarm is sounded all employees are required to evacuate the building and assemble at the flag pole across from the parking lot. Maps are posted throughout the facility that demonstrates the quickest route available to evacuate the building from the location.
- Elevators are not to be used during a fire alarm.
- Individuals that require assistance in evacuating the building must go to the "Area of Refuge" located in the Emergency stairwell of the phase III building. There is an emergency contact button that must be pushed to receive assistance. Pressing this button alerts DESPP Communications, which is manned 24 hours a day. A direct communications link is then made to the alarm panel area located in the Phase II classroom lobby where the fire alarm panels reside. This allows for voice communications from the area of refuge to emergency responders.

- Once assembled each ~~section~~ unit supervisor/lead (or their designee) will verify that all employees are assembled and report this to the Safety Officer (or their designee in case of their absence). If employees are missing but should be present the supervisor/lead must inform the Safety Officer. The Safety Officer will report to the Director, who will inform the Emergency personnel that respond.

- Individuals that have specific information regarding the incident must directly contact the Safety Office or Director and provide them with the information.
    - In the event that a fire alarm must be pulled, the individual pulling the alarm must report directly to the Safety Officer or Director to report the need for the fire alarm.
    - The Safety Officer (or designee) will obtain the emergency check list which is maintained on a clipboard in the administrative area and carry this to the assembly point.
        - In the event the Safety Officer is not present during an evacuation a member of administration will be responsible to obtain the employee "Emergency Check List"
    - The "Emergency Check List" contains a list of ~~section~~ unit supervisors/leads. It is the Quality Sections responsibility to assure that this list is kept up to date as personnel changes occur.
    - Once assembled each ~~section~~ unit supervisor/lead (or their designee) will verify that all employees are assembled and report this to the Safety Officer (or designee). If employees are missing but should be present the supervisor/lead must inform the Safety Officer. The Safety Officer will report to the Director, who will inform the Emergency personnel that respond.

- Individuals that have specific information regarding the incident must directly contact the Safety Officer or Director and provide them with the information.
  - In the event that a fire alarm must be pulled the individual pulling the alarm must report directly to the Safety Officer or Director to report the need for the fire alarm.

Other Emergencies:

- Employees who need assistance due to medical issues can use the page system to page help to their location; "medical emergency (location)". This will trigger a limited response by Troopers, Management and medically trained personnel.
- Employees who need assistance due to individuals causing a physical threat (such as visitors to either evidence receiving or the front door) can page "~~Officer~~ Trooper Blue" to their location. State troopers/officers assigned to the Division ~~laboratory~~ will respond immediately when this call is made.
  - These emergency codes are detailed in SOP GL-3; "Security"

Flammable chemical storage must comply with local fire codes

- In rooms with only one (1) exit, flammables must be stored away from exit.
- Flammable storage locations must be minimized. A single storage area away from the work area has been established for large quantities of flammable materials. The chemical storage room is located in the basement of the building ~~Laboratory~~ and has a separate air exhaust exchange system.
  - The Chemical store room contains solvent cabinets designated for storage of usable solvents, and for solvent waste. Additionally there are cabinets specifically for acid storage and "other" chemical waste storage.
  - Items not associated with chemical storage or waste should not be stored in this area.

6. Building Specific Safety Issues:

Lighting Levels:

1. All lighting fixtures meet electrical codes.

2. All ultraviolet lights (under 350 nanometers) should have a label reading "WARNING - Avoid Excessive Exposure to Eyes and Skin".

3. Fluorescent and incandescent bulbs are protected by plastic shields unless such shielding would result in a hazard.

4. Battery-operated emergency lights are present to provide safe exit from each facility in the event of power shutdown.

5. The ~~Laboratory~~ DSS facility has a back-up generator which will begin emergency operation of electrical and life safety systems within 15 seconds of a power failure.

Ventilation:

1. Fume hoods should be compatible with the materials used in them.

2. Fume hoods must exhaust hazards in such a way as to eliminate the possibility of reentry into the work area ~~laboratory~~ or exposure of individuals near the exhaust.

3. Where applicable, the fume hood breaker must be labeled "WARNING - Do Not Shut Off Without Notifying Laboratory Personnel".

4. Air conditioning must meet re-circulation requirements when designed and installed. Filters should be changed according to manufacturer's guidelines.

Electrical:

1. All electrical wiring and equipment must meet current National Electrical Code Standards. Designers and installers should be notified of this requirement.

2. Shock hazards will be handled as follows:

   - Ground fault interrupters are required per National Electrical Code Standards and State Building Codes.

   - Rubber matting is provided when working with high voltage equipment and/or external power supplies.

   - Emergency shutdown procedures should be immediately available for every outlet, instrument, and electrical device which is potentially hazardous.

- Emergency shutdown procedures will be posted at the point of need.

3. Explosion-proof motors should be used in all areas where any concentration of flammables may exceed dangerous levels.

7. Division Vehicles:

~~Laboratory~~ Vehicles assigned to the Division are available for use by ~~Lab~~ DSS personnel for court, crime scenes and other ~~Laboratory~~ authorized functions. An individual is assigned to oversee and record the upkeep of the vehicles. Employees using state vehicles are responsible to report any problems with the vehicle, upon return of the vehicles, to administration.

The following items are inspected on a routine basis:

- Steering
- Fluid levels
- Brakes
- Lighting systems (headlamps, brake lights, turn indicator lamps)
- Tire pressure and condition of tread. Both the wear and the suitability for road conditions re-evaluated.
- Spare tire, jack, lug wrench.
- First Aid kit
- Flashlight

8. Inspection and Compliance:

1. The Director or designee is responsible for safety within the Division ~~laboratory~~.
2. The Director has appointed the Quality Manager as the ~~Laboratory~~ Safety Officer and the Assistant Quality Manager as the Assistant Safety Officer.
   - The ~~Laboratory~~ Division shall have a safety committee that will be comprise of the Safety Officers and members of various laboratories within the Division.
   - Toxicology, Controlled Substance, Chemistry and Instrumentation
   - Forensic Biology/DNA
   - Identification
   - The ~~Laboratory~~ Safety Officer will meet with the safety committee on a quarterly basis to discuss any non-emergency issues/concerns that have arisen since the previous meeting.
   - Emergency meetings may occur as required by circumstance.
   - Minutes of these meetings will be kept on file with the Safety Officer.

3. The ~~Laboratory~~ Safety Officer or designee shall inspect the ~~laboratory~~ facility for compliance with these regulations annually. The Director will insure compliance.
4. It is the responsibility of all members of the Division ~~Laboratory~~ to report any hazards and/or violation of this safety manual to the ~~Laboratory~~ Safety Officer.
5. Any hazardous situation deemed uncorrectable should be temporarily prohibited by the ~~Laboratory~~ Safety Officer. An evaluation of this hazard by the ~~Laboratory~~ Safety Officer and Director (or designee) will be conducted for further corrective action or permanent abatement.
6. The ~~Laboratory~~ Safety Officer or designee is responsible for periodic maintenance/ checks (as appropriate). Maintenance /checks can be documented by use of safety checklists ~~using the forms in the appendix~~ or through electronic notification to the Safety Officer.
   The Safety Officer will maintain inspection program records in the following areas:

   - Fire extinguishers will be visually inspected monthly to verify that they have not been discharged (seal is in place). All extinguishers are visibly marked as such and re-certified annually.
   - Emergency Fire system:
     - Fire Panel – twice per year (by state contracted vendor overseen by building maintenance firm)
     - Fire Extinguisher Test – annually (by state contracted vendor, over seen by building management firm)
     - Fire Extinguisher Check – monthly (by building management firm)
     - Emergency /Exit Light Check – monthly (by building management firm)
     - Fire Sprinkler Test – Quarterly (by state contracted vendor, overseen by building management firm)
   - Emergency shower, annually.
   - Emergency eyewash, monthly.
   - First aid kits, ~~quarterly~~ annually.
   - Fume hoods, annually.
   - Vehicles and related equipment. Any problems noted during use should be discussed with the individual responsible for vehicle maintenance.
   - Personal safety devices:
     - AED, monthly
     - O_2 machine, monthly
7. Maintenance of emergency procedures, which should include a list of medical and emergency phone numbers, should be maintained in an accessible location. This will be reviewed annually and updated as required.
8. Proper handling, storage and disposal of biological contaminated items.
9. Proper use, storage and disposal of chemicals and hazardous waste. Inspection of

Hazardous Waste Storage Area, weekly ~~monthly~~.

10. ~~Laboratory~~ Personnel should notify the ~~Laboratory~~ Safety Officer or designee of any problems concerning the above-mentioned items as soon as they are observed.

Medical Surveillance**:**
Health Monitoring

- Hepatitis B: vaccinations are available to all employees this is performed through the DESPP safety committee. Once vaccinations are given, employees will have titers taken to demonstrate effectiveness. Employees requiring vaccinations or titers will contact the Safety Officer to determine the proper mechanism for this to occur.
  - Employees refusing a Hepatitis B vaccine must sign a refusal waiver.
- It is recommended that employees working in the Fire Arms unit ~~section~~ be tested annually for blood lead levels. This should be arranged through the employee's individual physicians.

9. Training:

1. New employees will be introduced to general topics of safety in the Division ~~laboratory~~. This will usually occur on their first day. The Safety Officer (or designee) will walk the employee through the facility, explain the evacuation plan, explain the use of emergency pages, introduce them to the safety manual and explain general ~~laboratory~~ Division safety policies. (See checklist GL-2.2)

2. Safety training sessions will be made available to ~~the laboratory~~ Division staff on a periodic basis specified by the ~~Laboratory~~ Safety Officer.

3. Records of each lesson conducted should be kept, including date, subject matter, and the name of the instructor and each student. When appropriate, electronic records of the training program will be kept.

4. Training in specific laboratory techniques and potential chemical/biological exposures will include training relevant to hazards that are inherent to the analysts' assigned unit ~~section laboratory section~~, including any necessary precautions. This training will be recorded, as specified; within each ~~laboratory~~ unit's training SOP.
   All analysts will be trained in: (as appropriate for the assigned laboratory unit ~~section~~)
   A. Safe handling of chemical and biological samples
   B. Cleanup of chemical spills and biological hazards
   C. Proper use of fume hoods with attention to sash height, chemical storage, and use with aerosol applications
   D. Locations and use of eyewash and shower stations.
   E. Proper use of all PPE as pertaining to specific tasks.

F. Safety issues specific to a particular technique will be included in the training for that procedure.

5. It is desirable to have as many employees as possible trained in the following areas:
   A. First Aid
   B. CPR
   C. Firearm Safety
   D. Driver Safety
   E. Proper use of fire extinguishers
   F. Evacuation drills

6. The role of the ~~Laboratory~~ Safety Officer - Employees must be familiar with the duties of the safety officer, the safety committee, and means of reporting hazardous conditions.