

**AUSTIN POLICE DEPARTMENT
FORENSIC CHEMISTRY SECTION
BLOOD ALCOHOL TRAINING MANUAL**

1. OVERVIEW OF BLOOD ALCOHOL TRAINING PROGRAM

1.1 Introduction

Approval for Blood Alcohol (BA) analysis includes analysis of blood, for the presence and quantitation of ethanol.

Individuals employed by the Austin Police Department as Blood Alcohol analysts must meet specific qualifications as outlined in this manual before being qualified to perform independent casework.

1.2 Purpose

The BA Training Manual is designed to provide the trainee with sufficient background, laboratory skills, education, competency, and supervised hands-on experience to adequately perform independent casework with minimal monitoring. The training time is approximately one to six months.

Trainees having prior experience in blood alcohol analysis procedures may be evaluated to facilitate the individual's training time and program. The training outlined in this manual is a guide and may be modified by the technical leader or trainer if deemed necessary.

1.3 Assignment of Trainer

Meetings between the trainee, the trainer, and/or supervisor will be held periodically in order to evaluate the trainee's progress, plan future study/practical assignments and discuss any deficiencies, which require additional training. The trainer will document the trainee's progress.

1.4 Trainee Responsibilities

The trainee will be required to keep a record of training. The training program covers much information that requires the trainee to keep up with reading assignments on a self-study basis. The trainee is responsible for informing his/her trainer or supervisor when problems arise at any time during the training period.

1.5 Training Documentation

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- The trainee is responsible for keeping a ~~diary~~ of detailed records of his/her training, practice testing, and progress.
- The trainer is responsible for providing a training plan or outline to the trainee. Completion of tasks by the trainee, exams and practical exercises will be evaluated, dated, and signed by the trainer.
- The items to be maintained in the training documentation include:
 - Training plans and training records. Details of training should include equipment, manufacturer's name and model, where appropriate.
 - A list of referenced literature completed.
 - A list of videos viewed and lectures attended (e.g. safety, training, etc.).
 - A list of each laboratory technique studied.
 - Verification of prepared solutions, with statistical evaluation, and other practical exams.
 - Unknown sample results, including quantitative ethanol results and qualitative volatile results. Proof of specimen results will include use of appropriate documentation.
 - Competency tests and results.
 - Proficiency tests and results.
 - Validation test results or special project assignments with summary reports, such as instrument verification.
 - Written / Oral exams.
 - Courtroom testimony attended and observations.
 - Workshop or lecture attended, including summary of materials covered, copy of certificates.

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➤ Trainer(s) Approval.

1.6 Training Assessment

A trainee shall have successfully completed a qualifying test before beginning independent casework responsibilities. Training assessment will be accomplished when:

- All competency samples must be satisfactorily analyzed (minimum of 40);
- The competency samples are approved by the trainer;
- All other training records documenting completion of training requirements, and trainee's credentials are approved;
- The trainee successfully completes a comprehensive standardized written exam for the specific approval of Blood Alcohol Analysis;
- The Laboratory Supervisor and Technical Leader recommend that the trainee be approved for independent casework (special conditions or other limitations to the trainee may apply);
- The Division Manager approves the trainee for independent casework.

2. BLOOD ALCOHOL SAFETY

Approximate Duration: 2 days.

Purpose: Orient and acquaint the trainee with blood alcohol laboratory safety practices to be followed in the laboratory.

2.1 Objectives:

2.1.1 Theoretical:

The trainee will be aware of specific hazards associated with performing blood alcohol analysis. Safe handling of samples and the waste generated during analysis is critical to protect the health of all persons who may come into contact with samples or waste either within or outside

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of the laboratory. Safety training promotes healthy employees and minimizes liability to the agency.

2.1.2 Practical:

The trainee will:

- Review, understand, and practice universal precautions for blood specimens and other body fluids.
- Know local work practice controls such as how to properly handle and dispose of blood contaminated supplies and properly disinfect the blood alcohol and toxicology work areas.
- Become familiar with local engineering controls such as hoods, chemical storage cabinets, chemical labeling, and cylinder proper handling of gas cylinders.
- Review required personal protective equipment
- Locate and use MSDS for chemicals used in analysis

2.2 Training Outline

2.2.1 Lesson Plan

- Blood borne pathogen review
- Protective measures review
- Universal precautions
- PPE required for blood alcohol
- Chemical storage cabinet locations and use
- Pressurized gas cylinders
- Flammable gas
- Preventative practices for procedural risks in blood alcohol analysis
 - Avoid contamination of documents
 - Cutting seals
 - Homogenizing sample using glass tissue grinder and proper clean-up
 - Avoiding exposure resulting from pressure buildup in specimen containers
 - MSDS of chemicals used in blood alcohol procedure
- Waste practices

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- Disposable pipet tips, headspace vials, gloves
- Laundry of lab coats
- Bulk hazardous waste disposal
- Emergency
 - Fire safety
 - Spills

2.2.2 Required Readings

References:

- “Biosafety in the Laboratory – Prudent Practices for the Handling and Disposal of Infectious Materials”, National Research Council, National Academy Press, 1989 – Chapters 3 & 4.
- Any appropriate papers or articles assigned by the trainer or technical leader

2.3 Practice

The trainee will complete an exercise demonstrating knowledge of use and location for blood alcohol analysis related safety equipment, devices, MSDS, and local safety practices.

Biological specimens may contain infective agents. Use universal precaution during evidence handling. Wear gloves, lab coats, and protective eyewear when working with biological specimens. Clothing may protect unbroken skin; broken skin should be covered by protective bandage. Proper gowning technique (gloves overlapping the sleeves) must be followed. Safety equipment will be issued to the trainee.

Hydrogen is a highly flammable gas used under pressure for gas chromatography. Leaks and proper cylinder handling are primary concerns. Heated zones of the gas chromatograph require caution to avoid burns.

2.4 Conclusion

2.4.1 Exams

Successfully complete all written and oral exams for this section.

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2.4.2 Assessment of training

The trainee and trainer will complete a checklist and sign-off sheet. Successful completion of this module is determined by the trainer and is a prerequisite for casework.

3. CHEMICAL PROPERTIES, PHYSIOLOGY, AND PHARMACOLOGY OF ETHANOL

Approximate Duration: 10 days

Purpose: The purpose of this module is to familiarize the trainee with ethanol as a beverage and as a chemical, absorption, distribution, and elimination of ethanol within the body, and the effects of ethanol on the human body.

3.1 Objectives

3.1.1 Theoretical

- Ethanol
The trainee will become familiar with the chemistry, history and production of alcohol and terms used by the alcoholic beverage industry. Alcohol has long been an active component in societies. Only in recent times have we studied how alcoholic beverages are processed to such a degree that we can produce any percent alcohol we like and flavor it as well. Ethanol is produced by fermentation; yeast consumes sugar or starch from fruits and grains and excretes ethanol. Alcoholic beverage industry standards now exist to define fermentation products according to alcohol content and the forensic scientist must be familiar with these terms and processes.
- Human Physiology/Pharmacology
The trainee will become familiar with the effects of ethanol on the human body, to include alcohol absorption, distribution, and elimination. The presence and effects of other volatiles on the body will also be discussed.

3.1.2 Practical

Following the completion of training the trainee will be able to:

- Ethanol
 - Draw the structure of ethanol

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- Explain chemical properties of ethanol
 - List and define the different terms used for ethanol
 - Describe the fermentation process of sugar or starch into ethanol
 - Summarize the history of ethanol production for human consumption
 - Explain the difference between proof and percent
 - Briefly describe how beer, wine and liquor are produced
 - Know the approximate percent content of beer, wine and liquor
 - Describe a “drink” in layman’s terms
- Human Physiology/Pharmacology
 - Be familiar with the pharmacological presence and effects of other volatiles on the body.
 - Know the lethal range of ethanol in the human body.
 - Know the decomposition products of ethanol in the human body.
 - Describe the passage of ethanol through the body starting with the mouth.
 - Describe absorption, distribution and elimination.
 - Be familiar with the alcohol dehydrogenase pathway for ethanol.
 - Be familiar with the Widmark equation and its use.
 - Be familiar with retrograde extrapolation for ethanol.
 - Describe the relationship of blood and its components, serum and plasma.
 - Know the units used to report ethanol in blood.
 - Know the units for reporting ethanol used by hospitals
 - Know accepted specimens for APD analysis.

3.2 Training Outline

3.2.1 Lesson Plan for Ethanol

- Chemical structure of ethanol
- Chemical properties of ethanol
- Nomenclature
- Human Physiology Overview
 - Ingestion to elimination from the body
 - Absorption
 - Distribution
 - Elimination
 - Biochemistry of metabolism

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- ✓ Oxidation by alcohol dehydrogenase
 - ✓ Microsomal ethanol oxidizing system
- Retrograde extrapolation using Widmark's formula
- General reporting methods
 - Units
 - APD
 - Hospitals
 - Specimens
 - Blood components (whole blood, serum, plasma)
 - Volatiles
 - Preservation of specimens
 - ✓ Microbial effects
 - ✓ Preservatives
 - ✓ Anticoagulants
- History of ethanol production
 - Fermentation process
 - Alcoholic beverages
 - Proof
 - Percent content
 - Congeners

3.2.2 Required Readings

- "Garriott's Medico-Legal Aspects of Alcohol, 5th Ed., Garriott, James C. Chapters 1, 2, and 3.
- Forensic Science Handbook, Saferstein, Richard; Ch 12 The Determination of Alcohol in Blood and Breath.
- Any appropriate papers or articles assigned by the trainer or technical leader

3.3 Practice

3.4 Conclusion

3.4.1 Exams

Successfully complete all written and oral exams for this section.

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3.4.2 Assessment of training

The trainee and trainer will complete a checklist and sign-off sheet. Successful completion of this module is determined by the trainer and is a prerequisite for casework.

4. HEADSPACE GAS CHROMATOGRAPHY

Approximate Duration: 10 days.

Purpose: Familiarize the trainee with the theory and the validation of headspace gas chromatography analysis

4.1 Objectives

4.1.1 Theoretical

Gas chromatography is used in many types of scientific analysis. Headspace gas chromatography is the technique of choice for the quantitative analysis of ethanol in biological specimens. Understanding the principles which govern headspace gas chromatography analysis is vital in obtaining an overall understanding of alcohol analysis.

4.1.2 Practical

Following the completion of training the trainee will be able to:

- Understand/Explain the theory and applications of gas chromatography.
- Understand limits of detection of the gas chromatograph.
- Understand/Document requirements listed in Blood Alcohol Technical Manual pertaining to instrumentation.
- Understand/Evaluate method parameters to produce good chromatographic results.
- Understand/Know components utilized in instrumentation (column type, detector type, gases utilized, etc...).
- Set up instrumentation for analysis and perform instrument validation measures (limit of detection, optimum operating temperature vs length of time)
- Perform basic and intermediate instrument maintenance.
- Review instrument capabilities and reinforce proficiency in manipulation of instrument software program functions.

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- Reinforce skills of setting up calibration and batch analysis.
- Understand the theory and operation of the headspace autosampler.

4.2 Training Outline

4.2.1 Lesson Plan

- Theory
 - Advantages
 - Disadvantages
- Operation
 - Inlets
 - Detectors
 - Column (specified in BA Technical Manual)
 - Composition
 - Range of temperature
 - Gases
 - Van Dempter curve
 - Carrier gas
 - Detector/Auxiliary gas
 - Headspace Autoanalyzer
- Interpretation of results

4.2.2 Required Readings

- “Basic Gas Chromatography” 5th edition, H.M. McNair and E.J. Bonelli, Varian Instruments, 1969.
- User Manual for the Shimadzu GC2010 Gas Chromatograph.
- User Manual for the Teledyne/Tekmar HT3 Headspace autoanalyzer.
- Any appropriate papers or articles assigned by the trainer or technical leader

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4.3 Practice

The trainer will:

- Demonstrate process for setting up the instrumentation for analysis. Discuss and demonstrate routine instrument maintenance required. Demonstrate capabilities of instrument software and functions available. Demonstrate process for setting up a calibration and batch analysis.
- Observe instrument set up by trainer.

The trainee will:

- Observe and assist in demonstration of routine maintenance performed.
- Demonstrate knowledge of software capabilities.
- Set up run for calibration and sequence run.

4.4 Conclusion

4.4.1 Exams

Successfully complete all written and oral exams for this section.

4.4.2 Assessment of training

The trainee and trainer will complete a training checklist and sign-off sheet. Successful completion of this module is determined by the trainer and is a prerequisite for casework.

5. FUNDAMENTAL OPERATIONS FOR BLOOD ALCOHOL

Approximate Duration: 10 days.

Purpose: Familiarize the trainee with the fundamental operations for blood alcohol analysis. This module includes the use of the pipette proficiency and precision, solution preparation, and basic instrument operation.

5.1 Objectives

5.1.1 Theoretical

The trainee will understand the attributes, applications, and limitations of the types of pipettes used for blood alcohol. The trainee will become

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adept at the preparation of stock solutions. The trainee will perform gas chromatography instrument software program functions and basic instrument operation and maintenance. The proper use of the fundamental tools used for blood alcohol analysis (pipettes, solutions, gas chromatographs, and their controlling software) is a necessity to enable the analyst to obtain accurate results when analyzing blood for the presence of alcohol and to quantify the amount of alcohol present. Understanding the underlying principles is important to enable recognition and resolution of analytical problems.

5.1.2 Practical

Following the completion of training the trainee will be able to:

- Label reagents properly
- Use proper techniques and understand the purpose, specifications, advantages and disadvantages of the following
 - Positive displacements pipettes
 - Air displacement pipettes
 - Glass and other pipettes
 - Use pipettes and volumetric glassware for the preparation of analytical solutions ranging from .001 to .500 standards, volatile mix and stock solutions.
 - Perform minor adjustment on pipettes according to protocol.
 - Set up the gas chromatograph for analysis and run samples.
 - Perform basic gas chromatograph instrument maintenance
 - Understand/Perform instrument software program functions, including instrument control, autosampler control, sequence files, calibration, batch run, and analytical report generation
 - Assess accuracy and precision of balance, pipettes, and instrument

5.2 Training Outline

5.2.1 Lesson Plan

- Pipettes
 - Positive displacement
 - Air displacement
 - Glass pipettes
 - Dispensers

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- Measurement techniques
- Adjustments and maintenance
- Stock solutions
 - Purpose
 - Preparation
 - Storage and expiration
 - Labeling
- Gas Chromatograph Basics
 - Software
 - Hardware
 - Operation
 - Maintenance

5.2.2 Required Readings

References:

- Any appropriate papers or articles assigned by the trainer or technical leader
- Literature from specific manufacturer for each pipette in use and the gas chromatograph used.
- Review sections in the BA Technical Manual for Pipette Verification
- Material Safety Data Sheets:
 - Acetaldehyde
 - Acetone
 - Ethanol
 - Formaldehyde
 - Isopropanol
 - Methanol
 - n-Propanol

5.3 Practice

The trainee will assess the weight of dispensed 200 μ L of water from a positive displacement pipette or pipetting device and 2 mL of water from a dispenser. The trainee will practice with each pipette dispensing water to a

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balance and compare its weight to the expected weight. Repetition will be performed until the trainee is satisfied with their technique. Trainee will record all of the values and results.

The trainer will observe and record weights as the trainee performs a pipette proficiency exam by dispensing specific amounts of water onto the analytical balance. The trainer will assess the trainee's ability to use each type of pipette utilized in blood alcohol analysis and to pipette with accuracy and precision.

For each exercise below, the trainee will prepare a batch work list, prepare a sequence file for the gas chromatograph, perform the analysis and prepare the batch results summary.

The trainee will perform an exercise to establish the limit of detection for the instrument by creating and running serial dilutions from a working concentration for the lower limit, and increasing concentrations for the upper limit. Exercise includes the evaluation of low level and valid detection.

The trainee will evaluate a gas chromatograph for performance for carryover by observing if any instrument carryover from a high ethanol concentration (at and above the upper limit) is greater than Limit of Detection levels.

The trainee will perform an exercise to prepare his/her own standards as outlined in the BA Technical Manual. The trainee will then run these standards in duplicate and then will apply the acceptance criteria to each standard.

The trainee will prepare the volatiles standard mix solution and individual volatile standards and perform gas chromatography to identify each component of the mix. The trainee will prepare a reference chart for each gas chromatograph column for later use.

5.4 Conclusion

5.4.1 Exams

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Successfully complete all written and oral exams for this section.

5.4.2 Assessment of training

The trainee and trainer will complete a checklist and sign-off sheet. Successful completion of this module is determined by the trainer and is a prerequisite for casework.

6. EVIDENCE

Approximate Duration: 3 days.

Purpose: Familiarize the trainee with the fundamental handling blood alcohol evidence. This module will cover from receiving the evidence, through the entire handling process ending with the return of the evidence to the Evidence Control Section.

6.1 Objectives

6.1.1 Theoretical

Maintaining a proper Chain of Custody is of utmost importance during evidence handling procedures. Proper sealing, identification and marking of evidence will be discussed.

6.1.2 Practical

Following the completion of training the trainee will be able to:

- Properly transfer evidence in LIMS.
- Properly mark evidence with a unique identifier.
- Properly seal evidence.

6.2 Training Outline

6.2.1 Lesson Plan

- LIMS & Versadex
- Seals
- Identification

6.2.2 Required Reading

- Any appropriate papers or articles assigned by the trainer or technical leader

6.3 Practice

- Trainee will practice marking blood tubes with case numbers and initials.

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- Trainee will practice using the evidence tape on zip lock bags.
- Trainee will practice transferring evidence in LIMS.
- Trainee will practice creating new items in Versadex and linking them back to LIMS.

6.4 Conclusion

6.4.1 Exams

Successfully complete all written and oral exams for this section.

6.4.2 Assessment of training

The trainee and trainer will complete a checklist and sign-off sheet.

Successful completion of this module is determined by the trainer and is a prerequisite for casework.

7. SAMPLE PREPARATION FOR ANALYSIS

Approximate Duration: 10 days.

Purpose: Familiarize the trainee with an evidence analysis scheme used within the Austin Police Department laboratory that includes initial examination, sampling, volume determination and sample preparation.

7.1 Objectives

7.1.1 Theoretical

The cases for analysis for blood alcohol analysis can be analyzed using this scheme: sample preparation followed by an instrumental analysis (headspace GC) capable of providing a definitive identification. By utilizing an established flow scheme in evidence examination, an analyst can insure maximum efficiency and avoid the possibility of cross-contamination. An established flow scheme will also, help to avoid mistakes and allow the analyst to be able to describe his or her efforts when testifying.

7.1.2 Practical

Following the completion of training the trainee will be able to:

- Transfer evidence and to themselves and others.

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- Open and re-seal all containers with correct identifying marks placed on all seals. Handle/analyze evidence without contaminating it.
- Determine how the evidence will be sampled.
- Describe an analysis scheme designed to prevent cross contamination of evidence both within a case and from other cases.
- Explain the flow of evidence from the perspective of the Blood Alcohol section including when and where bar-coding will be used.
- Discuss identifying marks on interior and exterior packaging.
- Discuss seals before, during, and after analysis.
- Discuss proper sampling techniques.
- Discuss volume determination techniques.
- Discuss sample preparation and methodology.

7.2 Training Outline

7.2.1 Lesson Plan

- Introduction to Sample Preparation for Blood Alcohol

7.2.2 Suggested References

- Any appropriate papers or articles assigned by the trainer or technical leader
- Blood Alcohol Technical Manual

7.3 Practice

- The trainer will review all aspects of case handling (bar-coding, sampling, marking, sealing, worksheet completion) with the trainee.
- Trainee will observe blood alcohol casework.
- After an appropriate observation period, as determined by the trainer, the trainee will discuss his or her understanding of how cases should be handled (bar-coding, sampling, marking, sealing, worksheet completion).
- After an appropriate observation and discussion period, as determined by the trainer, the trainee will be given simulated evidence on which to perform the mechanics of analysis.

7.4 Conclusion

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7.4.1 Exams

Successfully complete all written and oral exams for this section.

7.4.2 Assessment of training

The trainee and trainer will complete a checklist and sign-off sheet

Successful completion of this module is determined by the trainer and is a prerequisite for casework

8. ANALYTICAL PROCEDURES FOR BLOOD ALCOHOL ANALYSIS

Approximate Duration: 10 days.

Purpose: Familiarize the trainee with procedures necessary for the analysis of specimens for the presence of ethanol and other volatile compounds.

8.1 Objectives

8.1.1 Theoretical

The determination of the blood alcohol level is required for the successful prosecution of persons charged with driving while intoxicated (DWI). Using the provided sample, standards, controls and a chromatographic system the blood alcohol level can be accurately and reproducibly determined.

8.1.2 Practical

The trainee will gain competence in analysis and the evaluation of specimens and quality control data. The trainee will understand which samples are deemed acceptable for analysis, and be able to correlate the results from different specimen sources.

Following the completion of training, the trainee will be able to:

- Review preparation of required solutions
- Record observations of samples
- Document the condition of evidence
- Process clotted samples using a tissue grinder
- List components of procedure, associated hazards, handling instruction and waste instructions
- Understand sample factors affecting results

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8.2 Training Outline

8.2.1 Lesson Plan

- Reagent preparation
 - Review of reagent preparation
 - Purpose for each reagent
 - Stability of standards
 - Chemical hazard awareness/waste disposal
- Materials
 - Sample vial racks
 - Sample vials
 - Reagents
- Sample preparation
 - Sample hazard awareness/waste disposal
 - Steps of procedure
 - Clots and use of tissue grinder
 - Matrix (sample origin) effects
- Evaluation of results
 - Physiology review and how type of sample affects results
 - Microbial effects/preservatives/anticoagulants
 - Sample age
 - Criteria for acceptability for reporting results

8.2.2 Required Readings

References:

- Any appropriate papers or articles assigned by the trainer or technical leader
- Austin Police Department Blood Alcohol Technical Manual.
- Medicolegal Aspects of Alcohol, 5th. Ed., James Garriott, Ch. 5,12, 20.

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- Material Safety Data Sheets:
 - Sodium chloride
 - Ethanol
 - N-propanol
 - Formaldehyde solution
 - Acetone
 - Toluene
 - Isopropanol
 - Acetaldehyde
 - Methanol
 - Sodium Fluoride
 - Sodium Oxalate

8.3 Practice

- 8.3.1 The trainee will prepare a batch run list and enter all required information for the run into the gas chromatograph software, perform the analysis, and prepare batch results summary, case documentation, and batch archive processes.
- 8.3.2 Reanalysis of at least forty (40) previously analyzed samples
- 8.3.3 Satisfactory completion of at least four (4) specimens from proficiency test(s) for which the manufacturer has supplied final summary information.
- 8.3.4 All acceptance criteria must be met as specified in the BA Technical Manual.
- 8.3.5 Trainer will demonstrate and observe the performance of sample preparation and batch creation. The trainer will observe the reanalysis of specimens from previously analyzed cases. The trainer will also discuss any documentation and safety issues.
- 8.3.6 The trainer will review the results of practice samples.
- 8.3.7 The results from the trainee's re-analysis must correspond to the previous results from that sample within the same uncertainty range (allowing for evaporation and age of sample).

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8.4 Conclusion

8.4.1 Exams

Successfully complete all written and oral exams for this section.

8.4.2 Assessment of training

The trainee and trainer will complete a checklist and sign-off sheet.

Successful completion of this module is determined by the trainer and is a prerequisite for casework.

9. MEASUREMENT UNCERTAINTY

Approximate Duration: 5 days.

Purpose: Familiarize the trainee with the theory of uncertainty of measurement (UM).

9.1 Objectives

9.1.1 Theoretical

Ethanol concentrations have been determined to be critical measurement. As such, the measurement uncertainty associated the ethanol concentration must be determined and documented. Below are listed the sources of uncertainty associated with the quantitation of ethanol in blood that have been considered for this method.

9.1.2 Practical

The trainee will gain confidence in the UM of the analysis of blood alcohol. The trainee will understand potential sources and kinds of error, how to minimize these errors and how to determine the amount of error contributed to the total expanded uncertainty.

9.2 Training Outline

9.2.1 Lesson Plan

- Sources of uncertainty
 - Pipettes
 - Dispensers
 - Standards and Controls
 - Repeatability

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- Types of uncertainty
 - Type A
 - Type B
- Distribution
 - Normal
 - Rectangular
 - Triangular
- Uncertainty Budget

9.2.2 Required Reading

- Any appropriate papers or articles assigned by the trainer or technical leader

9.3 Practice

9.3.1 Trainee will review and become familiar with the uncertainty budget used in reporting blood alcohol analysis results

9.4 Conclusion

9.4.1 Exams

Successfully complete all written and oral exams for this section.

9.4.2 Assessment of training

The trainee and trainer will complete a checklist and sign-off sheet. Successful completion of this module is determined by the trainer and is a prerequisite for casework.

10. ETHICS

10.1 ASCLD/LAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists will be read and discussed

10.2 The trainer may assign other pertinent ethics assignments as deemed necessary

11. LEGISLATION

Approximate Duration: 2 days

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FORENSIC CHEMISTRY SECTION
BLOOD ALCOHOL TRAINING MANUAL**

Purpose: Familiarize the trainee with the vocabulary used in Texas law

11.1 Training Outline:

11.1.1 Trainee will become familiar with the vocabulary definitions pertinent to alcohol found in the law

11.1.2 Become familiar with Texas Penal Code Title 10 Chapter 9 Intoxication and alcoholic beverage offense

11.1.3 Become familiar with the definitions of: alcohol concentration, intoxication, driving while intoxicated, driving under the influence, boating while intoxicated, intoxication assault, and intoxication manslaughter

11.1.4 Become familiar with the enhanced penalty for DWI offenses

11.1.5 Become familiar with court rulings governing DWI cases

11.1.6 Become familiar with Administrative License Revocation