15.4 Reading and Practical Exercises

15.4.1 Reading

15.4.1.1 Spiehler, V. and Levine, B., Pharmacokinetics and Pharmacodynamics. Refer to index for page numbers, in: Principles of Forensic Toxicology, Second Edition, edited by Barry Levine, AACC, 2003 or more recent version.

15.4.1.2 Isenschmid, D.S. Cocaine. Refer to index for page numbers, in: Principles of Forensic Toxicology, Second Edition, Levine, B. ed., AACC, 2003 or more recent version.

15.4.1.3 Huestis, M.A. Marijuana. Refer to index for page numbers, in: Principles of Forensic Toxicology, Second Edition, edited by Barry Levine, AACC, 2003 or more recent version.

15.4.1.4 Moore, Karla. Amphetamine/Sympathomimetic Amines. Refer to index for page numbers, in: Principles of Forensic Toxicology, Second Edition, edited by Barry Levine, AACC, 2003 or more recent version.

15.4.1.5 Kerrigan, S. and Goldberger, B.A. Opioids. Refer to index for page numbers, in: Principles of Forensic Toxicology, Second Edition, edited by Barry Levine, AACC, 2003 or more recent version.

15.4.1.6 Clarke's Analysis of Drugs and Poisons. Third Edition. Moffat, A.C., Ed, London: The Pharmaceutical Press. 2004 or more recent version.

15.4.1.7 Julien, R.M., Principles of Drug Action in: Primer of Drug Action, pp. 1-39, Freeman-New York, 1998 or more recent version.

15.4.1.8 Benet, L.Z., Kroetz, D.L. and Sheiner, L.B.., Pharmacokinetics: The Dynamics of Drug Absorption, Distribution and Elimination. pp. refer to index, in: Goodman and Gilman's The Pharmacological Basis of Therapeutics, New York: McGraw-Hill, Most current edition available.

15.4.1.9 Baselt, R.C., Disposition of Toxic Drugs and Chemicals in Man. Seventh Edition. Foster City: Biomedical Publications, 2004 or more recent version.

15.4.1.10 Baselt, R.C., Drug Effects on Psychomotor Performance. Foster City: Biomedical Publications, 2001 or more recent version.

15.4.2 Exercises

15.4.2.1 Define the following terms:

15.4.2.1.1 Pharmacology

15.4.2.1.2 Pharmacokinetics

15.4.2.1.3 Pharmacodynamics

15.4.2.2 Discuss the factors that influence the metabolism of drugs.

15.4.2.3 List the major metabolites for the following representative compounds. Indicate which metabolites are psychoactive.

15.4.2.3.1 Methamphetamine
15.4.2.3.2 Cocaine alone and in combination with alcohol
15.4.2.3.3 Diazepam
15.4.2.3.4 Clonazepam
15.4.2.3.5 Alprazolam
15.4.2.3.6 Flunitrazepam
15.4.2.3.7 Carisoprodol
15.4.2.3.8 Heroin
15.4.2.3.9 Codeine
15.4.2.3.10 Delta-9-THC
15.4.2.3.11 Imipramine
15.4.2.3.12 Amitriptyline
15.4.2.3.13 Propoxyphene
15.4.2.3.14 Tramadol

15.4.2.4 Characterize phase I and II drug metabolism.

15.4.2.5 The metabolism of the 1,4-Benzodiazepine, Diazepam, yields several metabolites which in turn undergo biotransformation. Indicate which compounds result in each case:

15.4.2.5.1 N-dealkylation (P450 mediated)
15.4.2.5.2 Hydroxylation (P450)
15.4.2.5.3 Glucuronidation

15.4.2.6 The metabolism of codeine yields several metabolites. Indicate which compounds result in each case:

15.4.2.6.1 O-dealkylation (P450 mediated)
15.4.2.6.2 N-dealkylation (P450)
15.4.2.6.3 Glucuronidation

15.4.2.7 The metabolism of methamphetamine yields several metabolites. Indicate which compounds result in each case:

15.4.2.7.1 N-dealkylation (P450)
15.4.2.7.2 Oxidative deamination (P450)
15.4.2.7.3 Aromatic hydroxylation (P450)

15.4.2.8 List compounds that yield methamphetamine as a metabolite.

15.4.2.9 The metabolism of cocaine yields several metabolites. Indicate which compounds result in each case:

15.4.2.9.1 N-dealkylation (P450)

15.4.2.9.2 Transesterification with alcohol (Esterase)
15.4.2.9.3 Ester hydrolysis mediated by esterases (two compounds)
15.4.2.9.4 Aromatic hydroxylation (P450)

15.4.2.10 Define the following terms in regard to drug metabolism:
15.4.2.10.1 First pass effect
15.4.2.10.2 Half-life
15.4.2.10.3 Metabolism
15.4.2.10.4 Zero and first order reactions

15.4.2.11 Give two examples of commonly encountered compounds that form glucuronide conjugates in phase II.

15.4.2.12 Describe the potential modes of excretion for drug compounds.

15.4.2.13 Describe what a prodrug is, why they would be used, and give some examples of prodrugs.

15.4.2.14 Describe how urinary pH will affect urinary methamphetamine concentration.

16.0 The Criminal Justice System and Drugged Driving Laws in Idaho

16.1 Background and Theory

16.1.1 In order to be able to testify in a court of law, it is imperative to understand what roles individuals within the court play as well as know basic court terms and how court proceedings work.

16.1.2 In order for expert testimony to be admissible, certain criteria must be evaluated and met. This criteria was outlined in the case of Daubert v. Merrell Dow Pharmaceutical. This case had tremendous implications for science in the courtroom' making judges the "gatekeepers" of the courtroom and what scientific evidence is reliable and relevant.

16.1.3 Before the precedent was set by Daubert v. Merrell Dow Pharmaceutical, admissibility of expert witness testimony had been determined in the case of Frye v. United States. In that case, it was found that expert opinion based on a scientific technique is admissible only when the technique has been "generally accepted" as reliable in the relevant scientific community.

16.1.4 Idaho Code §18-8002, §18-8004 and §18-8006 refer to drinking/drugged driving laws. Since a large amount of cases received in toxicology are related to driving, it is important to understand the applicable Idaho codes and how the testing done fits into those codes.

16.1.5 This section of the Idaho State Police Forensic Services (ISP-FS) toxicology training plan is designed to provide a forensic analyst Trainee with the necessary information to be able to understand and explain the principles of Idaho Code §18-8002, §18-8004 and §18-8006 , the criminal justice system and court proceedings and our role within them.

16.2 Objectives, Principles, and Knowledge

16.2.1 Complete the reading and exercises specified below.

16.3 Health and Safety Hazards

16.3.1 N/A

16.4 Reading and Practical Exercises

16.4.1 Reading

16.4.1.1 Schmalleger, F.J., Criminal Justice: A Brief Introduction. Ninth Edition, Prentice Hall:New Jersey, 2011 (paperback).

16.4.1.2 Matson, J.V., Effective Expert Witnessing. Second Edition, Lewis Publishers:Boca Raton, 1994.

16.4.1.3 Kurmack, N.T., Legal Aspects of Forensic Science – Chapter 1, pp. 1-27. in: Forensic Science Handbook, Volume I, Saferstein, R. ed, Prentice-Hall:New Jersey, 1982.

16.4.1.4 Freckelton, I., Legal Aspects of Forensic Science. pp. 1099 – 1102. in: Encyclopedia of Forensic Sciences, Volume 4, Siegel, J.A., Saukko, P.J. and Knupfer, G.C. editors, Academic Press: San Diego, 2000.

16.4.1.5 Idaho Code §18-8002, §18-8004 and §18-8006.

16.4.2 Exercises

16.4.2.1 Through the required reading the trainee should gain a practical understanding of the major branches of US federal and state government.

16.4.2.2 Describe which two branches of the US government have the authority to define what a crime is. Describe how the processes for each branch differ.

16.4.2.3 Be aware of which branch of US government law enforcement falls under.

16.4.2.4 Through the required reading, the trainee should gain a practical understanding of the organizational structure of the criminal justice system.

16.4.2.5 Describe the difference between being charged with an infraction, misdemeanor, or felony type offense.

16.4.2.6 Describe the differences between criminal and civil proceedings, including how the evidence is evaluated.

16.4.2.7 What are the three ways that a person can be charged with a criminal offense? Discuss the differences.

16.4.2.8 Describe the subpoena process. What is the purpose of a subpoena? What do the words “duces tecum” mean when added to the subpoena?

16.4.2.9 Describe the Discovery Process. What does the Discovery Process hope to prevent?

16.4.2.10 Define the following terms:

16.4.2.10.1 Plaintiff

16.4.2.10.2 Defendant

16.4.2.10.3 Counsel

16.4.2.11 Discuss who has the burden of proof: the plaintiff or defendant.

16.4.2.12 Describe the role and functions of the following criminal justice system components:

16.4.2.12.1 Judge

16.4.2.12.2 Prosecutor

16.4.2.12.3 Defense Attorney

16.4.2.12.4 Expert Witness

16.4.2.12.5 Jury

16.4.2.12.6 Bailiff

16.4.2.12.7 Court Reporter

16.4.2.13 Discuss the following questions:

16.4.2.13.1 What is a deposition?

16.4.2.13.2 What are the key differences between a bench trial versus a jury trial?

16.4.2.14 Describe the steps or events that take place in the course of a trial.

16.4.2.15 Discuss the difference between direct, cross and rebuttal testimony.

16.4.2.16 Answer the following questions:

16.4.2.16.1 What does it mean when the analyst's qualifications are stipulated to?

16.4.2.16.2 What objections are made by attorneys during a trial?

16.4.2.16.3 What is the difference between an objection being sustained versus overruled?

16.4.2.16.4 Describe how an analyst is qualified to testify as an expert witness. What is voir dire as it relates to the testimony of an expert witness?

16.4.2.16.5 Describe possible outcomes of the trial process.

16.4.2.16.6 Discuss the ramifications of Daubert v. Merrell Dow Pharmaceutical and Frye v. United States.

16.4.2.16.7 List the factors that help assure a scientific testing procedure is established as reliable.

16.4.2.17 For Idaho Code §18-8002A, Define the following terms and answer the question:

16.4.2.17.1 "Actual physical control"

16.4.2.17.2 "Administrative hearing"

16.4.2.17.3 "Evidentiary testing"

16.4.2.17.4 What happens if evidentiary testing is refused or not properly completed?

16.4.2.17.5 What is the role of the administrative hearing officer?

16.4.2.18 For Idaho Code §18-8004, answer the following:

16.4.2.18.1 Describe what the code defines as unlawful.

16.4.2.18.2 What additional information does the code allow to be considered when a person's ethanol concentration is less than 0.08 (g/100cc blood, g/210L breath or 67mL urine).

16.4.2.19 For Idaho Code §18-8006, what does it describe as "aggravated driving while under the influence of alcohol, drugs or any other intoxicating substances"?

17.0 Standardized Field Sobriety Tests (SFST's) and the Drug Evaluation and Classification (DEC) Program

17.1 Background and Theory

17.1.1 The Standardized Field Sobriety Test (SFST) was developed in 1984 after research conducted for the National Highway Traffic Safety Administration found that the validity of the field sobriety testing being administered was very low. It is comprised of three phases and allows officers to assess an individual's degree of impairment.

17.1.2 The Drug Evaluation and Classification Program is a 12-step process that was started in 1979 to assist police officers in determining if a suspect was actually under the influence of something. Before the DEC Program, officers would often pull over a vehicle for suspicious driving, or detain a suspect believing that the suspect was under the influence of alcohol, only to find that there was a very low level or no alcohol detected. Since the development of the DEC Program, trained officers can recognize physical signs of impairment and determine what substance(s) the suspect is under the influence of.

17.1.3 This section of the Idaho State Police Forensic Services (ISP-FS) toxicology training plan is designed to provide a forensic analyst Trainee with the necessary information to be able to understand and explain what SFST's and DRE examinations are, which tests are administered and what the results of the testing mean.

17.2 Objectives, Principles, and Knowledge

17.2.1 Complete the exercises specified below.

17.3 Health and Safety Hazards

17.3.1 N/A

17.4 Reading and Practical Exercises

17.4.1.1 Kunsman, G.W. Human Performance Toxicology. pp. 15 - 30, in: Principles of Forensic Toxicology, Second Edition, edited by Barry Levine, AACC, 2003 or more recent version.

17.4.1.2 Page, T.E., The Classification of Drugs by Category. pp. 1 - 12, in: Medical-Legal Aspects of Drugs, Second Edition, Burns, M. ed., Tucson: Lawyers & Judges Publishing Co., Inc., 2007.

17.4.2 Exercises

17.4.2.1 Describe the origins of the Standardized Field Sobriety Testing (SFSTs).

17.4.2.2 What are the phases of Standardized Field Sobriety Tests? What information does each phase provide? Describe what driving behaviors may indicate impaired driving.

17.4.2.3 Describe the process for administering the last phase of SFSTs.

17.4.2.4 Describe the origins of the Drug Evaluation and Classification (DEC) Program.

17.4.2.5 Describe each step of the physiological and psychomotor test protocols that an officer trained in the DEC program administers to a person suspected of driving impaired. What is this officer referred to as?

17.4.2.6 Describe each of the DEC program drug categories. What is the basis of these categories?

17.4.2.7 Provide examples of the major types of drugs that fall under each of the DEC program categories.

17.4.2.8 Describe the physiological responses consistent with each of the drug categories.

17.4.2.9 Describe the psychomotor test performance consistent with each of the drug categories.

17.4.2.10 Can the DEC Program differentiate between methamphetamine and cocaine use? Do methamphetamine and marijuana abuse share any physiological indicators?

17.4.2.11 What is a "Medical Rule Out"? What does it hope to prevent?

17.4.2.12 Describe the four types of poly-drug use considered by the DEC Program.

17.4.2.13 What are the three "S's" used by the DEC program to illustrate how effects of a particular drug category can vary? Describe the factors that influence each "S."

18.0 Presentation of Evidence in Court

18.1 Background and Theory

18.1.1 Understanding proper court attire and etiquette is vital when preparing to testify in a court of law as a witness.

18.1.2 This section of the Idaho State Police Forensic Services (ISP-FS) toxicology training plan is designed to provide a forensic analyst Trainee with the necessary information to be able to testify in a courtroom.

18.2 Objectives, Principles, and Knowledge

18.2.1 Complete the reading and exercises specified below.

18.3 Health and Safety Hazards

18.3.1 N/A

18.4 Reading and Practical Exercises

18.4.1 Reading

18.4.1.1 Weingarten, H. The Expert Witness: the Toxicologist in Court. pp. 225- 242, in: California Association of Toxicologists (CAT) Manual for Analytical Toxicology Training, 1994.

18.4.2 Exercises

18.4.2.1 Discuss proper demeanor and body language while testifying in court.

18.4.2.2 Describe proper attire for court.

18.4.2.3 Discuss ways to deal with nervousness while testifying.

18.4.2.4 Describe the documents that should be reviewed for a case in preparation for testimony. Consult at least two senior analysts on how they prepare for court.

18.4.2.5 Prepare your curriculum vitae utilizing the appropriate template.

18.4.2.6 Prepare a list of court questions related to toxicology and provide sample answers to those questions.

18.4.2.7 The trainee should engage in mini-mock court sessions on a regular basis to ensure they are ready for their actual mock court.

18.4.2.8 The mini-mock court sessions should be scheduled by the trainer after the trainee has completed their practice samples. They may begin scheduling these sessions earlier, at the discretion of the trainer.

19.0 Mock Courtroom Testimony and Technical Session

19.1 Background and Theory

19.1.1 This section of the Idaho State Police Forensic Services (ISP-FS) toxicology training plan is designed to allow the Trainee to demonstrate their ability to testify in a court proceeding.

19.2 Objectives, Principles, and Knowledge

19.2.1 Complete the exercises specified below.

19.3 Health and Safety Hazards

19.3.1 N/A

19.4 Reading and Practical Exercises

19.4.1 Exercises

19.4.1.1 A mock court will be conducted to provide testimony for a minimum of one DUID case with pharmacology questions.

19.4.1.2 During the mock court, the Trainee may be asked how they would explain the following to a jury (note: not all topics may be covered as some will not pertain):

19.4.1.2.1 Laboratory accreditation
19.4.1.2.2 How samples are received
19.4.1.2.3 How the sample is initially examined
19.4.1.2.4 EIA Screen
19.4.1.2.5 Sample Preparation
19.4.1.2.6 Instrumentation used for confirmatory testing
19.4.1.2.7 The technical and administrative review process
19.4.1.2.8 Quantitation and the uncertainty associated with the values
19.4.1.2.9 The intended use of the drug(s) detected
19.4.1.2.10 Possible side effects of the drug(s) detected
19.4.1.2.11 DEC/DRE categories and Indicators
19.4.1.2.12 Neurotransmission
19.4.1.2.13 Pharmacology
19.4.1.2.14 Pharmacodynamics
19.4.1.2.15 Pharmacokinetics
19.4.1.2.16 Half-life

19.4.1.2.17 Onset of action
19.4.1.2.18 Duration of action
19.4.1.2.19 Types of Tolerance

19.4.1.3 In addition to the mock court, the trainee shall also complete a technical session where they are asked to explain technical concepts. These concepts can include topics such as instrumentation, data analysis, sample issues, and uncertainty of measurement. This list is not inclusive and other topics may be covered, at the discretion of the trainer and/or Technical Lead. The technical session can be completed before or after the mock court but both need to be completed in order for this section to be complete.

20.0 Analysis of Practice Samples

20.1 Background and Theory

20.1.1 This section of the Idaho State Police Forensic Services (ISP-FS) toxicology training plan is designed to allow the Trainee to demonstrate their ability to perform the analytical methods, data analysis and/or reporting of compounds.

20.2 Objectives, Principles, and Knowledge

20.2.1 The Trainee will demonstrate the ability to do the necessary tasks for the methods they are to be performing.

20.3 Health and Safety Hazards

20.3.1 Gloves, lab coats and safety glasses or goggles should be worn while working in the laboratory.

20.3.2 Universal precautions should be taken when working with biological samples.

20.4 Reading and Practical Exercises

20.4.1 To develop their expertise in using analytical methods, the Trainee will apply them to the analysis of control samples, old proficiency test samples and/or training samples. These training samples may be obtained in the following way: A forensic scientist assigned to a case may take an additional sample from casework that the Trainee may analyze for training purposes. The sample may only be taken if the reserve after removing the training sample is greater than ½ (½ meaning: ½ of the total sample of that type submitted. For example, if two grey top blood tubes are submitted it would be half of the total blood in the two tubes. If a purple and a grey top tube are submitted, it would be the ½ of the volume of the blood in each of the tube types submitted). In addition the Trainee may, under the direct observation of a competent analyst, handle case samples. The Trainer will make all conclusions and must be present and observe all aspects of the work (the Trainee works as the "hands of the Trainer"). All evidence in the "hands of the Trainer" process will be checked out by the Trainer and the chain of custody shall be maintained in the name of the Trainer/trained analyst. Examination reports shall be based solely on examinations

performed by or directly observed by approved analysts. The report will be issued by the Trainer/trained analyst. The trainee will document work performed in the notes section for the case and central data checklist (if applicable). If any evaluations or interpretations for casework are done by the Trainee, the Trainee must initial the examination record for the work performed and the Trainer/trained analyst must confirm observations and conclusions by initialing or signing each page of the examination records. The number and type of practice samples will be at the discretion of the Trainer and the Trainee. A minimum of 2 batches of practice samples will be complete. When both parties are comfortable with the Trainee's proficiency and understanding of the methods, this section can be signed off.

20.4.2 For the purposes of this training module, data analysis may also be considered practice samples.

21.0 Competency Testing

21.1 Background and Theory

21.1.1 Upon the completion of training plan sections, the Trainee must complete a competency test consisting of 6 or more specimens. The number of samples will be decided by the Trainer and Technical Lead. The specimens must contain representative commonly encountered parent drug and drug metabolites. Competency tests are logged into ILIMS and handled as a typical case. Reports and applicable restitutions will be prepared, and the case will go through administrative and technical review. The Trainer will evaluate all aspects of how the case is handled and reported, in addition to reporting the appropriate results of testing.

21.2 Objectives, Principles, and Knowledge

21.2.1 The Trainee will demonstrate that they are able to perform all the duties associated with processing case samples.

21.3 Health and Safety Hazards

21.3.1 Gloves, lab coats and safety glasses or goggles should be worn while working in the laboratory.

21.3.2 Universal precautions should be taken when working with biological samples.

21.4 Reading and Practical Exercises

21.4.1 To demonstrate that the Trainee is ready to perform supervised casework, they must complete a competency test. In order for the test to be evaluated as passing, the Trainee must get a 100%, meaning that they correctly identify all compounds that are present and not report any compounds that are not. The Trainer and/or Technical Lead will evaluate the competency test to determine if the results obtained are appropriate. If a drug is not confirmed but is noted and a reason for not confirming given, it will be up to the individual grading the test to determine if the analyst's assessment was correct.

22.0 Technical and Administrative Review

22.1 Background and Theory

22.1.1 Upon completion of supervised casework, the analyst will have the opportunity to begin performing case reviews for the methods they are approved in.

22.2 Objectives, Principles, and Knowledge

22.2.1 Complete the exercises below.

22.3 Health and Safety Hazards

22.3.1 N/A

22.4 Reading and Practical Exercises

22.4.1 After the analyst has completed training in blood or urine toxicology they may begin training for technical and administrative review sign off in the appropriate discipline.

22.4.2 The Trainer will demonstrate for the Trainee how the technical and administrative review is done and what documents must be reviewed. It is recommended that the Trainee develop a checklist to use when first starting technical and administrative review.

22.4.3 The Trainee will perform technical and administrative review on a minimum of 50 cases. All aspects of the review (chain of custody, central files, data review, etc.) will be completed. Any errors caught will be recorded and reported to the Trainer. The Trainee will not sign off on the cases but instead the cases will then be reviewed by an approved reviewer.

23.0 Supervised Casework

23.1 Background and Theory

23.1.1 After completing the appropriate training modules (including competency testing and mock court) the Trainee will be permitted to do supervised casework.

23.2 Objectives, Principles, and Knowledge

23.2.1 The Trainee will demonstrate that they are able to perform all the duties associated with processing case samples.

23.3 Health and Safety Hazards

23.3.1 Gloves, lab coats and safety glasses or goggles should be worn while working in the laboratory.

23.3.2 Universal precautions should be taken when working with biological samples.

23.4 Reading and Practical Exercises

23.4.1 A minimum of 15 supervised blood toxicology and/or urine toxicology cases will be completed prior to the Trainee being signed off to perform independent casework. The Trainee can be signed off on just blood toxicology, just urine toxicology, or both depending on what the training entailed. If the Trainee is getting signed off on both blood and urine toxicology at the same time, they must complete a minimum of 15 cases total. After completion of the 15 cases, the Trainer and/or Technical Lead will evaluate if the need for additional supervised cases are necessary. The exception is screening with the Randox Evidence MultiSTAT instrument. The analysts that participate in the validation will not be required to perform supervised casework.

23.4.2 The supervising analyst is responsible for regularly observing the trainee and ensuring they properly perform casework activities including casework documentation, evidence handling, following the analytical method, performing and interpreting test methods and data, and reporting results as set forth in the quality system. The supervising analyst(s) shall be documented in the case file. The Quality Manager must grant approval prior to the trainee starting supervised cases. The Quality Manager will ensure that all of the essential components of the training plan for the method(s) or skill the analyst is being signed off on have been completed

(this includes, but is not limited to, competency testing, mock court, court room training, and general forensic knowledge).

APPENDIX A

It is expected that analysts will progress at different rates based on past experience; education and that people learn and retain skills differently. The following are general guidelines for the Trainer to consider when assigning, evaluating and signing off on the practice casework section of the toxicology training manual.

The Trainee will practice each extraction method on controls, old proficiency tests and aliquots taken from casework, when feasible.

The Trainee will generally practice with samples to learn the extraction process and then the Trainee will do practice runs that consist of multiple extraction processes. The Trainee will most likely need to run between 50 and 100 samples to demonstrate competence. In addition, the Trainee should perform data analysis on past analytical runs.

The Trainer should observe the Trainee preparing multiple runs. During this observation the Trainer will confirm that the Trainee is:

-Handling the samples with care and in a way that ensures the samples don't get placed in the wrong tube at any time during the examination process.
-Using appropriate techniques to prevent contamination.

The Trainee should act as the hands of the analyst for at least one run and demonstrate that: they are checking the names on the sample container(s) to make sure they match the name entered into the ILIMS system, they are correctly labeling the container(s), they understand how to document the condition of the evidence and describe it in notes, store evidence during the examination process and seal it after analysis.

The Trainee will demonstrate that they store and handle controls and standards appropriately.

The Trainee will be able to perform the routine maintenance and perform and evaluate the quality checks that are required for all of the instrumentation he or she is approved to use.

The Trainee will demonstrate that he or she is comfortable operating the instrumentation and can do basic trouble shooting.

If appropriate for the method(s), the Trainee will demonstrate a solid understanding and comfort level determining when a weak analyte meets the criteria for identification.

The Trainee will demonstrate performance on multiple runs with no need for assistance from the Trainer and with expected efficiencies on the extractions.

If appropriate for the method(s), the Trainee will demonstrate the understanding and the ability to hydrolyze samples, what may prevent this process from working and how to determine this part of the analysis worked.

If appropriate for the method(s), the Trainee will demonstrate the ability to derivatize samples, understand what problems may occur and how to evaluate that in an analysis run.

The Trainee will demonstrate the understanding of which extraction process to run first on samples and which detected analytes should be confirmed.

The Trainee will demonstrate the understanding of when the officer or prosecutor should be consulted on casework decisions.

TRAINING MANUAL TOPIC COMPLETION SIGN-OFF

Training Plan Sections Applied to Both Urine and Blood Toxicology

3.0 ADMINISTRATIVE ISSUES

3.4 Read and understood relevant sections of the Quality Manual, Health and Safety Manual, and relevant sections of the Idaho State Police Employee Handbook. This step is fulfilled with a verbal and/or written examination.

_____ _____

Date of Completion Trainee

_____

Trainer

3.4.2.2 Complete the **ISPFS Core Training**. Verification of this is noted in this sign-off section. A copy of the training sign-off is to be included in the analyst's toxicology training file.

_____ _____

Date of Completion Trainee

_____

Trainer

4.0 EVIDENCE HANDLING ISSUES

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

5.0 BALANCE OPERATION AND INTERMEDIATE PIPETTE CHECK

Competency Verified by: ❒ Verbal or Written Examination and Demonstration

_____ _____

Date of Completion Trainee

_____

Trainer

6.0 SOLUTION PREPARATION

Competency Verified by: ❒ Verbal or Written Examination and Demonstration

_____ _____

Date of Completion Trainee

_____

Trainer

7.0 LIQUID-LIQUID EXTRACTION

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

8.0 SOLID PHASE EXTRACTION

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

9.0 SUPPORTED LIQUID EXTRACTION (SLE)

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

10.0 GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)

Competency Verified by: ❒ Verbal or Written Examination and Demonstration

_____ _____

Date of Completion Trainee

_____

Trainer

11.0 LIQUID CHROMATOGRAPHY/TANDEM MASS SPECTROMETRY (LC/MS/MS or LCMS-QQQ)

Competency Verified by: ❒ Verbal or Written Examination and Demonstration

_____ _____

Date of Completion Trainee

_____

Trainer

12.0 QUADRUPOLE TIME OF FLIGHT LC/MS (LC-QTOF)

Competency Verified by: ❒ Verbal or Written Examination and Demonstration

_____ _____

Date of Completion Trainee

_____

Trainer

13.0 RANDOX EVIDENCE MULTISTAT

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

14.0 FOLLOWING ANALYTICAL METHODS AND PREPARING CASE FILES

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

15.0 BASIC PHARMACOLOGY AND DRUG METABOLISM

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

16.0 THE CRIMINAL JUSTICE SYSTEM AND DRUGGED DRIVING LAWS IN IDAHO

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

17.0 STANDARDIZED FIELD SOBRIETY TESTS (SFST's) AND THE DRUG EVALUATION AND CLASSIFICATION (DRE) PROGRAM

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

18.0 PRESENTATION OF EVIDENCE IN COURT

Competency Verified by: ❒ Verbal or Written Examination

_____ _____

Date of Completion Trainee

_____

Trainer

19.0 MOCK COURTROOM TESTIMONY AND TECHNICAL SESSION

Competency Verified by: ❒ Demonstration

_____ _____

Date of Completion for Mock Court Trainee

_____

Trainer

_____ _____

Date of Completion for Technical Session Trainee

_____

Trainer

20.0 ANALYSIS OF PRACTICE SAMPLES

Competency Verified by: ❒ Demonstration

_____ _____

Date of Completion Trainee

_____

Trainer

21.0 COMPETENCY TESTING

Competency Verified by: ❒ Demonstration

_____ _____

Date of Completion Trainee

_____

Trainer

22.0 TECHNICAL AND ADMINISTRATIVE REVIEW

Competency Verified by: ❒ Demonstration

_____ _____

Date of Completion Trainee

_____

Trainer

23.0 SUPERVISED CASEWORK

Competency Verified by: ❒ Demonstration

_____ _____

Date of Completion Trainee

_____

Trainer

ANALYTICAL METHOD (AM) SIGN-OFF SECTION

Analytical Method	Completion Date Method Content	Trainee/Trainer Initials	Practice Sample Completion Date	Trainee/Trainer Initials

Liquid/Liquid Extraction – Qualitative Blood and/or Urine

Analytical Method	Completion Date Method Content	Trainee/Trainer Initials	Practice Sample Completion Date	Trainee/Trainer Initials
AM #2: General Extraction of Urine for Basic/Neutral or Acidic/Neutral Compounds				
AM #3: Qualitative 11-nor-9-THC-D9-COOH (Carboxy-THC) in Urine				
AM #5: Qualitative Benzodiazepines and Ancillary Compounds in Urine				
AM #6: Screening for Gamma-Hydroxybutyrate (GHB) in Urine				
AM #8: Basic and Neutrals Drugs in Blood				
AM #9: Acidic and Neutral Drugs in Blood				

Immunoassay – Qualitative Blood

Analytical Method	Completion Date Method Content	Trainee/Trainer Initials	Practice Sample Completion Date	Trainee/Trainer Initials
AM #XXXX: Screening for Drugs of Abuse with Randox Evidence MultiSTAT Analyzer				

Supported Liquid Extraction (SLE)

Analytical Method	Completion Date Method Content	Trainee/Trainer Initials	Practice Sample Completion Date	Trainee/Trainer Initials
AM #25: Blood and Urine Multi-Drug Screen by LCMS-QQQ				
AM #26: Blood and Urine THC and Metabolites Screen by LCMS-QQQ				
AM #27: Quantitative Analysis of THC and Metabolites in Blood and Urine by LCMS-QQQ				
AM #28: Blood and Urine Multi-Drug Confirmatory Analysis by LCMS-QQQ				
AM #29: Blood and Urine Multi-Drug Screen by LC-QTOF				
AM #30: Blood and Urine THC and Metabolites Screen by LC-QTOF				