

# Controlled Substances Training Manual

## 1.0 Purpose

The following manual is to be used as a guide in training new Forensic Scientists in the analysis of controlled substances. It may be used in its entirety or for just the sections of interest. Each section is to be used with the corresponding analytical method (AM) found in the ISP Controlled Substances AM manual. Special thanks are given the Kansas Bureau of Investigations for their permission to use their manual as the basis for this manual.

## 2.0 Procedure

The intent of this training plan is to be “hands on”, as such after all background reading for each section/ sub-section has been completed, any questions answered, and any exercises performed, competency in each procedure will be demonstrated using practice samples. As each subsection is completed both the Forensic Scientist and the trainer will sign and date the checklist. Once all training is complete then the analyst will get a copy of the checklist and the original will go to the QA/QC manager to be kept with the analyst’s other training records.

## 3.0 General Laboratory

- 3.1 Complete ISP Core training
- 3.2 Review Balcalsop, demonstrate competency of theory and use of the various balances in the laboratory including but not limited to the operation of tare features and the monthly calibration check. Read section 28B, pg 533 through 540, of *Analytical Chemistry*, by Skoog/West/Holler, 6<sup>th</sup> edition.
- 3.3 Review General drug AM.

Date of completion \_\_\_\_\_ Forensic Scientist

Trainer

**4.0 Testimony Training**

4.1 Observation

Attend an actual trial for observation.

Date of completion \_\_\_\_\_ Forensic Scientist

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**5.0 Marijuana**

5.1 Background reading

To include Idaho Code sections 37-2701 (n)(s) and 37-2707 d(27),  
“Drug Identification Bible, 2010”. Pages 581-686.

Worksheets and reporting format.

MJ training.doc

TLC training.doc

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**Sections 5.2, 5.3, 5.4 and 5.5 are used with the Marijuana AM.**

5.2 Physical examination, AM section 5.0.0

5.2.1 Microscopic examination of cystolithic and unicellular hairs, seed structure.

5.2.2 Seed germination, AM section 5.0.0

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5.3 Duquenois Levine

AM section 7.0.0.

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5.4 Thin Layer Chromatography (TLC)

5.4.1 Basic theory and AM section 6.0.0

5.4.2 Chloroform and Pet ether/ Ethyl ether systems with fast blue BB.

Date of Completion \_\_\_\_\_ Forensic Scientist

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5.5 Hashish and Pipes

Order of analysis and reporting differences.

Date of completion \_\_\_\_\_ Forensic Scientist

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5.6 Competency test

100 % correct analysis of various plant, and other, material.

100 % correct answers on the written test

The competency tests will be provided by the discipline leader.

Date of completion \_\_\_\_\_ Forensic Scientist

Trainer

5.7 Mock Court

Purpose, layout and critique.

Date of completion \_\_\_\_\_ Forensic Scientist

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## 6.0 Solid Dosage Drugs

### 6.1 Background reading

The Idaho Code, all of section 37-2700.

Drug Identification Bible, 2000 version or newer. Applicable sections.

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Trainer

### 6.2 Gas Chromatograph Mass Spectrometer (GC/MS)

6.2.1 Hewlett Packard/ Agilent GC/MS tutorial

6.2.2 Review of maintenance procedures and schedules

6.2.3 Review of documentation and filing system

6.2.4 HP/Agilent Chemstation software

6.2.5 Review of various temperature programs

6.2.6 Read GC training.doc and MS training.doc

6.2.7 Review GC/MS AM.

6.2.8 Review CTMAMPH training.doc

6.2.9 Review Cocaine training.doc

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Trainer

### 6.3 Fourier Transform Infrared Spectrometer

6.3.1 Nicolet tutorial

6.3.2 Nicolet Omni software

6.3.3 Review maintenance procedures, schedules, and documentation

6.3.4 Spectroscopy training.doc, IR training.doc, and the FTIR AM.

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6.4 Chemical color (spot) tests

6.4.1 Review Clarke's Analysis of Drugs and Poisons, 3<sup>rd</sup> edition, vol 1, chapter 19.

6.4.2 Spot tests training.doc

6.4.3 Spot tests of known standards with various reagents.

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6.8 Mushrooms

6.8.1 Review Psilocyn/Psilocybin AM.

6.8.2 Review CTMHAL.doc

6.8.3 TLC analysis with T1

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6.9 Pills, LSD, and general unknowns

6.9.1 Review references (i.e. PDR, Logo, etc. DEA and Idaho code scheduling

6.9.2 Review Extractions.doc, CTMHAL training.doc, LSD AM, General unknown AM.

Date of completion \_\_\_\_\_ Forensic Scientist

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6.10 Clandestine Laboratory Analysis (common)

6.10.1 Review HI and Birch reduction methods of manufacturing. Develop an analytical selection sequence for each method that details what analytes you need to look for, where they would be located, and how you would analyze for them.

6.10.2 Phosphorous AM

6.10.3 Iodine AM

6.10.4 Identify pseudoephedrine and ephedrine from solid and liquid samples using

- extractions and other analytical procedures
- 6.10.5 Methamphetamine extraction and analysis from solid and liquid samples
  - 6.10.6 Review clanlab recert Powerpoint and test scenarios
  - 6.10.7 Pass Clanlab testimony test

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Trainer

6.11 Competency test

100% correct identification of controlled substances from a variety of powders, liquids, and or pills. Results will be attained using all aspects of analysis including at least one result from each instrument capable of producing structural information, i.e. MS and FTIR.

100 % correct answers on written test

The competency tests will be provided by the discipline leader.

Date of completion \_\_\_\_\_ Forensic Scientist

Trainer

6.12 Mock court

Purpose, layout, and critique

Date of completion \_\_\_\_\_ Forensic Scientist

Trainer

## History for ISP Forensic Laboratory Training Manual

<u>Revision #</u>	<u>Issue or review date</u>	<u>History</u>	<u>Author or Reviewer</u>
2	6/4/03	Changed format on all sections	D.C. Sincerbeaux
3	1/13/06	Added 3.4 and changed 5.11	D.C. Sincerbeaux
4	5/9/07	added 3.5, section 4 court testimony, reordered numbering, added written tests to competency's, changed SOP to AM.	D.C. Sincerbeaux
5	5/22/09	Dropped 5.8 and 6.13	D.C. Sincerbeaux
6	11/16/10	Added 3.6, 3.7. Changed 5.1	D.C. Sincerbeaux
7	10/17/14	Added 6.10.6, changed 2.0.0, 6.10	D.C. Sincerbeaux

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