FLORIDA DEPARTMENT OF LAW ENFORCEMENT
CRIMINAL JUSTICE STANDARDS AND TRAINING COMMISSION

AGENCY INSPECTOR COURSE
A 24-Hour Course

TRAINING SCHOOL	850 CLASS NUMBER	SESSION DATES

TOPICS OF INSTRUCTION	HOURS RECOMMENDED
Administration	1
Lesson 1: Introduction	1
Lesson 2: The Dynamics of Breath Testing	2
Lesson 3: The Instrumentation	4
Lesson 4: The Reference Sample Device, Alcohol Reference Solutions and Dry Gas Standard	1
Lesson 5: Conducting the Agency Inspection and Laboratory Practical	8
Lesson 6: Courtroom Testimony	3
Written Examination and Proficiency	4

Agency Inspector Course
Lesson Plan

Lesson One
Introduction

Purpose

The student will learn the role of an Agency Inspector as it relates to ensuring evidentiary breath test instruments are providing accurate and reliable results.

Resources

Chapter 11D-8, Florida Administrative Code
Chapters 316, 322 and 327, Florida Statutes

Objectives

1.1 Define agency inspector and agency inspection.

- Agency Inspector – a person who has been issued an Agency Inspector permit by the Department
- Agency Inspection – the periodic testing of the calibration and operation of a breath test instrument, including all required preventative maintenance, in accordance with Rule 11D-8.006, F.A.C., and performed by a person authorized by the Department.
    - The agency inspection process ensures the instrument is operating properly and providing accurate and reliable results.

1.2 State the role of an agency inspector.

- To verify an evidentiary breath test instrument is functioning properly and is in proper calibration by conducting an agency inspection in accordance with Chapter 11D-8, FAC.
- An agency inspector may also be a breath test operator and conduct breath tests in accordance with Chapter 11D-8, FAC. The role of a breath test operator is to collect and analyze evidence in the form of breath samples in accordance with Chapter 11D-8, FAC.

OBTAINING AN AGENCY INSPECTOR PERMIT

1.3 List the requirements outlining the qualifications an applicant for an agency inspector permit must meet.

- Have been issued a Breath Test Operator permit issued by the Department valid at the time the application is submitted;
- Present employment by an agency, or the Department;
- Successful completion of the basic Agency Inspector Course approved by the Criminal Justice Standards and Training Commission; and
- Submit to the Department a complete written application.

1.4 State an agency inspection of an evidentiary breath test cannot be conducted until an agency inspector permit is issued by the Department.

- Successful completion of the Agency Inspector Course alone does not necessarily mean that the applicant will be issued an agency inspector permit by the Department. The course completion certificate given by the Training Center is not a permit.

PERMIT

1.5 Define Permit.

- Permit – when issued by the Department, certifies that the holder has met all necessary qualifications, remains in full compliance with these rules and is authorized to perform all related duties. A permit is issued only to a qualified applicant and remains valid and in full effect until determined otherwise by the Department.
    - Information concerning a person's permit can be obtained in ATMS (Automated Training Management System) or by calling the Department.

MAINTAINING AN AGENCY INSPECTOR PERMIT

1.6 State an agency inspector permit is maintained through successful completion of continuing education.

- Agency Inspectors must satisfy continuing education requirements in order to maintain valid permits; and

- Continuing education requires successful completion of the applicable Commission-approved Renewal Course by June 30 following the fourth permit anniversary date, and during each subsequent four-year cycle.
- Successful completion of the Agency Inspector Course renews a person's Breath Test Operator permit.
- Successful completion of the Agency Inspector Renewal Course renews a person's Agency Inspector and Breath Test Operator permits.

1.7 List the requirements that must be met if continuing education is not met.

- If an agency inspector does not attend the Agency Inspector Renewal Course within their continuing education cycle, once the cycle is up, they must not conduct agency inspections until they attend and successfully complete an Agency Inspector Renewal Course.

1.8 List the requirements that must be followed if an agency inspector does not successfully complete a renewal course.

- If an agency inspector fails an Agency Inspection Renewal Course, he/she shall not perform any duties authorized by the permit until he/she successfully completes an Agency Inspector Course.

Agency Inspector Course
Lesson Plan

Lesson One
Introduction

Review Questions

1. What is the role of an agency inspector?

2. What are the qualifications that must be met in order to apply for an Agency Inspector permit?

3. True or False. An Agency Inspector can conduct an agency inspection after completing the Agency Inspector Course.

4. To maintain an Agency Inspector permit, when must continuing education be met?

5. What course must an agency inspector take if continuing education is not met?

6. What course must be taken if an Agency Inspector fails the Agency Inspector Renewal Course?

Agency Inspector Course
Lesson Plan

Lesson One
Introduction

Review Answers

1. What is the role of an agency inspector?

   To verify an evidentiary breath test instrument is functioning properly and is in proper calibration by conducting an agency inspection in accordance with Chapter 11D-8, FAC.

2. What are the qualifications that must be met in order to apply for an Agency Inspector permit?

   - Have been issued a Breath Test Operator permit issued by the Department valid at the time the application is submitted;
   - Present employment by an agency, or the Department;
   - Successful completion of the basic Agency Inspector Course approved by the Criminal Justice Standards and Training Commission; and
   - Submit to the Department a complete written application.

3. True or False. An Agency Inspector can conduct an agency inspection after completing the Agency Inspector Course.

   False. In order to conduct an agency inspection, a person must have been issued an Agency Inspector permit.

4. To maintain an Agency Inspector permit, when must continuing education be met?

   Continuing education required successful completion of the applicable Commission-approved Renewal Course by June 30th following the fourth permit anniversary date, and during each subsequent four-year cycle.

5. What course must an agency inspector take if continuing education is not met?

   If an agency inspector does not attend the Agency Inspector Renewal Course within their continuing education cycle, once the cycle is up, they must not conduct agency inspections until they attend and successfully complete an Agency Inspector Renewal Course.

6. What course must be taken if an Agency Inspector fails the Agency Inspector Renewal Course?

   If an agency inspector fails an Agency Inspection Renewal Course, he/she shall not perform any duties authorized by the permit until he/she successfully completes an Agency Inspector Course.

Agency Inspector Course
Lesson Plan

Lesson Two
The Dynamics of Breath Testing

Purpose

During this lesson, the student will obtain a more in depth understanding of breath alcohol analysis and how to obtain reliable breath alcohol samples.

Resources

Chapter 11D-8, Florida Administrative Code

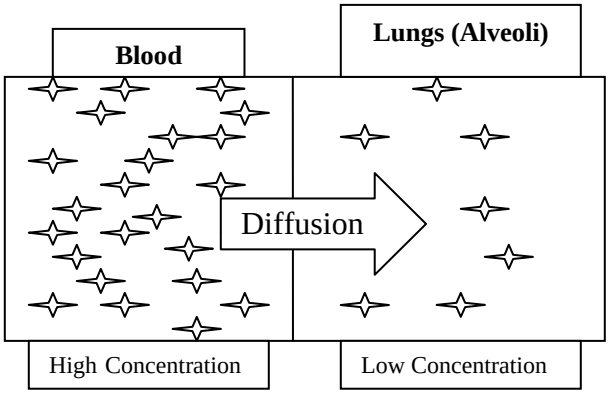
Objectives

2.1 Define Absorption, Distribution and Elimination as they relate to alcohol.

- Absorption – the process by which alcohol enters the bloodstream.
  - Approximately 25% of a dose of alcohol is absorbed in the stomach and approximately 75% of a dose is absorbed in the small intestines.
- Distribution – the process by which alcohol is spread to all the watery parts of the body via the bloodstream.
- Elimination – the process by which alcohol is removed from the body. It is divided into two categories: metabolism and excretion.
  - Metabolism is the process of breaking down alcohol into carbon dioxide and water in the liver.
    - Approximately 95% of a dose is metabolized by the liver.
    - Alcohol > Acetaldehyde > Acetic Acid > Carbon Dioxide and Water
    - The main enzyme that breaks down alcohol is alcohol dehydrogenase.
  - Excretion is the process of removing alcohol unchanged via the sweat, urine, tears and breath.
    - Approximately 5% of a dose is excreted unchanged.
    - Alcohol In > Alcohol Out

2.2 Describe how alcohol circulating in the body is excreted unchanged by the lungs.

- The transfer of alcohol and other volatile substances from the blood to the breath occurs in the alveoli of the lungs.
- Alveoli are the thin-walled sacs that fill the lungs and allow for gas and volatile substances to pass from the blood into the lungs and from the lungs into the blood. Blood vessels are in direct contact with the alveoli.
- Alcohol readily passes from the blood into the alveoli by a process called diffusion (automatic movement of a substance from an area of high concentration (blood) to an area of low concentration (lungs)) because alcohol is a low weight molecule and is volatile.



2.3 State deep lung air is the type of breath sample which will render the most accurate breath alcohol level representing the alcohol concentration circulating in the subject's body. Define deep lung air.

- Deep lung air is the breath that is coming from the deepest part of the lungs (near the alveoli) that can be obtained without collapsing the lungs. It can be best obtained by having the subject normally inhale and provide a continuous, sustained breath sample for as long as they possibly can.
- A breath sample obtained from the upper portions of the respiratory tract (mouth, trachea, bronchi) is diluted with room air and will not provide an accurate representation of the alcohol concentration circulating in the subject's body.

2.4 Define and discuss a minimum acceptable breath sample for the Intoxilyzer 8000.

- A minimum acceptable breath sample is defined as a breath sample that has met the minimum criteria of the instrument's analysis to ensure the BREATH SAMPLE is reliable.

Intoxilyzer 8000		
Time	Time	The subject must provide a continuous breath sample of sufficient flow for at least one (1) second.
Pressure	Volume	The subject must provide a continuous breath sample of at least 1.1 liters of breath.
Slope	Slope	The subject must provide a breath sample in which the concentration of the sample consistently rises and then levels off.

- State when PROVIDE SAMPLE NOW is displayed, the subject will have three (3) minutes to provide a minimum acceptable breath sample.
- Failure to provide a breath sample into the instrument or to provide a breath sample for less than one (1) second will result in a "NO SAMPLE PROVIDED" message.
- Failure to provide a breath sample of at least 1.1 liters into the instrument will result in a "VOLUME NOT MET" message.
- Failure to satisfy Slope will result in either a "SLOPE NOT LEVEL" or a "SLOPE NOT MET" message
- If PROVIDE SAMPLE NOW is again displayed, the subject is not providing a proper sample to be analyzed. The subject must continue to provide a breath sample until a proper sample is obtained.

2.5 State the purpose for obtaining a minimum of two samples of breath within fifteen minutes of each other producing results within 0.020 g/210L.

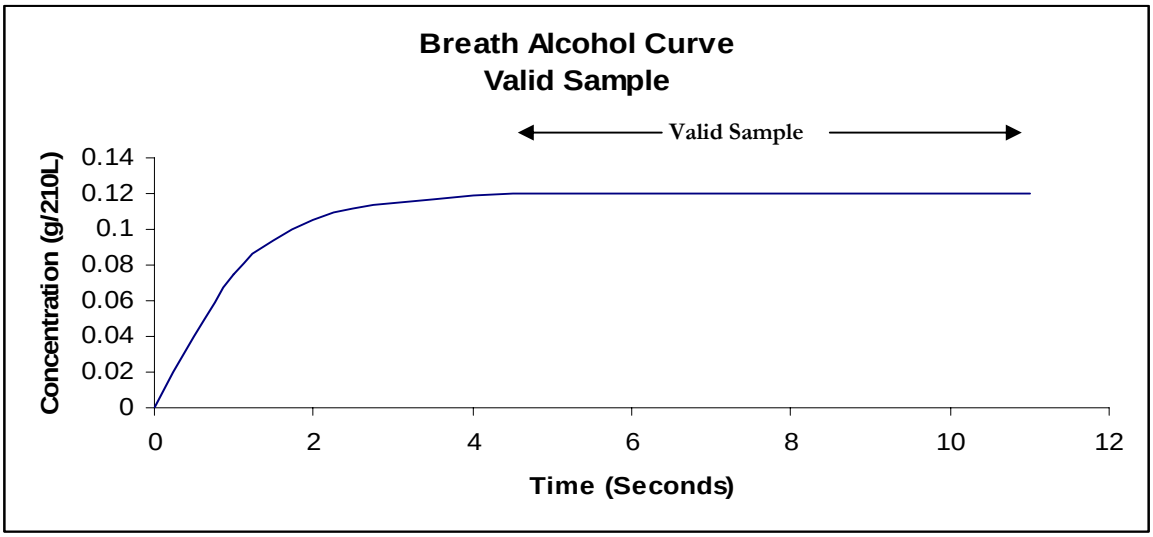
- The result of the second sample confirms the result of the first sample.
- It shows that the two breath samples are as similar as possible to each other.
- It shows that there are no interferents, mouth alcohol, and radio frequency interference affecting the results obtained from the breath samples.

2.6 Define Interferent, Mouth Alcohol and Radio Frequency Interference.

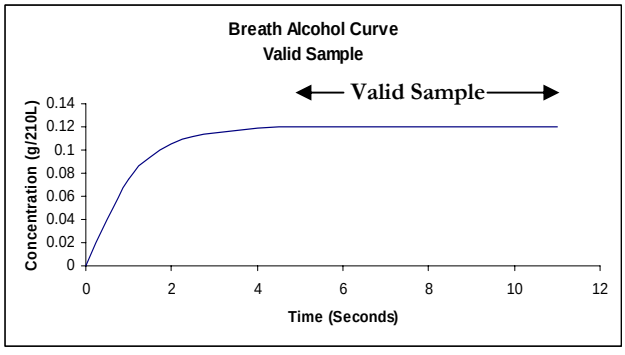
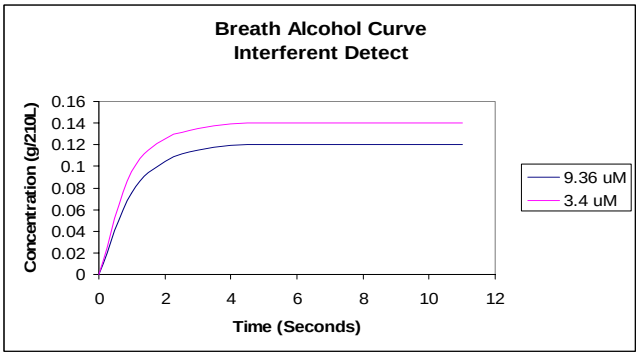
- Interferent – A substance that appears in sufficient non-lethal quantities in the human breath and is capable of being detected by the instrument at these non-lethal quantities.
    - Acetone is an example of an interferent. It could possibly appear on the breath of a person who is in diabetic shock or fasting (ketogenesis).
- Mouth Alcohol – residual alcohol that remains in the mouth. It could be present if a person consumes an alcoholic beverage just prior to taking a breath test.
- Radio Frequency Interference (RFI) – Radio waves transmitted in proximity to a breath testing instrument that can possibly affect the analysis of breath samples if they are in sufficient strength and wavelength. The Intoxilyzer 8000 contains an RFI detector to indicate that RFI is in sufficient strength to affect the instrumentation.

2.7 Define and understand the breath alcohol curve.

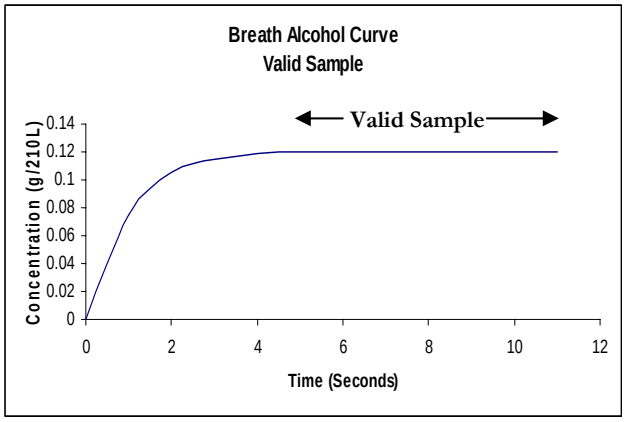
- The breath alcohol curve is a graph of the alcohol concentration of a breath sample that occurs over time.
- In order for a breath sample to be reliable, the concentration of the alcohol in the breath sample must rapidly rise and level off in the breath alcohol curve.

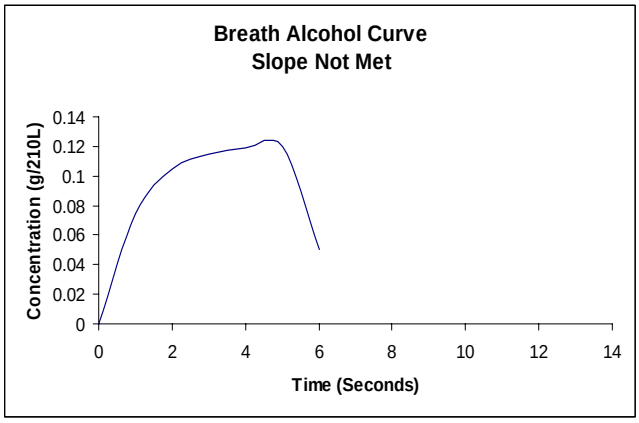


2.8 The student must be able to answer questions regarding a breath test on an Intoxilyzer 8000 with messages that occurred during the breath test - INTERFERENT DETECT, SLOPE NOT MET, SLOPE NOT LEVEL, VOLUME NOT MET, and NO SAMPLE PROVIDED.

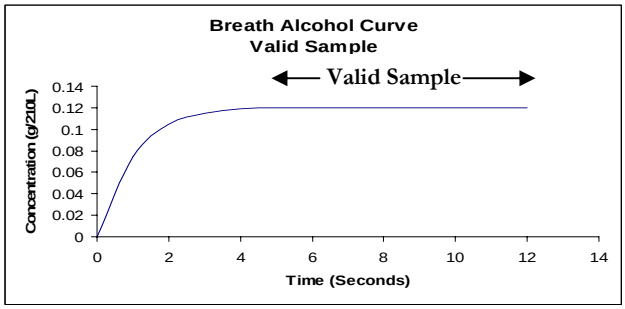
Scenario One: A breath test with INTERFERENT DETECT as a result.	
QUESTION	SAMPLE ANSWER
When conducting a breath test, you obtain a result of INTERFERENT DETECT on the first breath sample. The instrument aborted the test. You then restarted the breath test and obtained two valid breath samples. QUESTION: Why did you obtain INTERFERENT DETECT on the first sample? QUESTION: Are the two breath samples you subsequently obtained reliable?	ANSWER: An interfering substance was detected in the breath or control sample OR the calculated result obtained from the detection of light from each filter did not agree. ANSWER: The two subsequent breath samples are reliable because the instrument did not detect an interfering substance in the breath or control sample OR the instrument did not calculate results from the detection of light from each filter that were different from each other. There was no interferent detected in either subsequent breath sample. The two subsequent breath samples agree within 0.020 g/210L of each other which further shows that there was no interferent or problems with the subsequent samples obtained independently of each other.
	

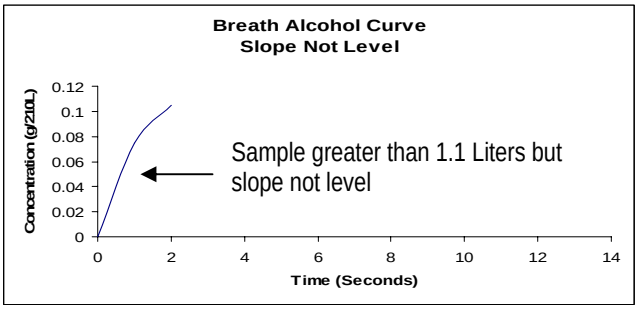
Scenario Two: A breath test with SLOPE NOT MET as a result.	
QUESTION	SAMPLE ANSWER
When conducting a breath test, you obtain a result of SLOPE NOT MET on the first breath sample. The instrument aborted the test. You then conducted another twenty minute observation period, restarted the breath test and obtained two valid breath samples. QUESTION: Why did you obtain SLOPE NOT MET on the first sample? QUESTION: Are the two breath samples you subsequently obtained reliable?	ANSWER: The sample provided did not meet the slope requirements of a minimum acceptable breath sample and there was a negative slope (the alcohol concentration from the subject sample decreased). ANSWER: The two subsequent breath samples are reliable because all minimum acceptable breath sample requirements including slope were met and there was no negative slope associated with either subsequent breath sample. The two subsequent breath samples agree within 0.020 g/210L of each other which further shows that there was no problem with the slope of the subsequent samples obtained independently of each other.



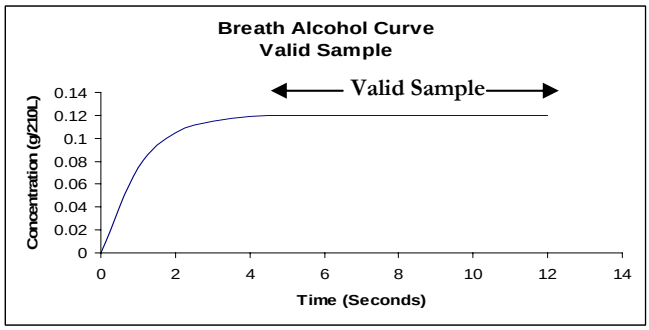


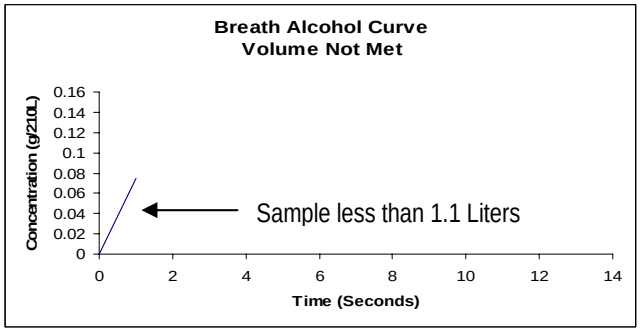
Scenario Three: A breath test with SLOPE NOT LEVEL as a result.	
QUESTION	SAMPLE ANSWER
When conducting a breath test, you obtain a result of SLOPE NOT LEVEL on the first breath sample. The instrument requested the second and third samples. The second and third samples were valid breath samples. The results on the Affidavit were: Sample #1 – SNL* Sample #2 – 0.112 Sample #3 – 0.115 *Slope Not Level – (0.065 – Breath sample not reliable for quantitative breath alcohol level) QUESTION: Why did you obtain SLOPE NOT LEVEL on the first sample? QUESTION: Are the two breath samples you subsequently obtained reliable? QUESTION: Why is the SLOPE NOT LEVEL result lower and not reliable?	ANSWER: The sample provided did not meet the slope requirements of a minimum acceptable breath sample and the slope of the breath sample being provided is still rising and did not level off. ANSWER: The two subsequent breath samples are reliable because all minimum acceptable breath sample requirements including slope were met and the slope was no longer rising and had leveled off for both subsequent breath samples. The two subsequent breath samples agree within 0.020 g/210L of each other which further shows that there was no problem with the slope of the subsequent samples obtained independently of each other. ANSWER: The SLOPE NOT LEVEL result is lower because the subject had not provided a deep lung air breath sample when he/she stopped providing their sample. The result is not reliable because the instrument has not determined that there are no interferents or mouth alcohol in the sample provided.



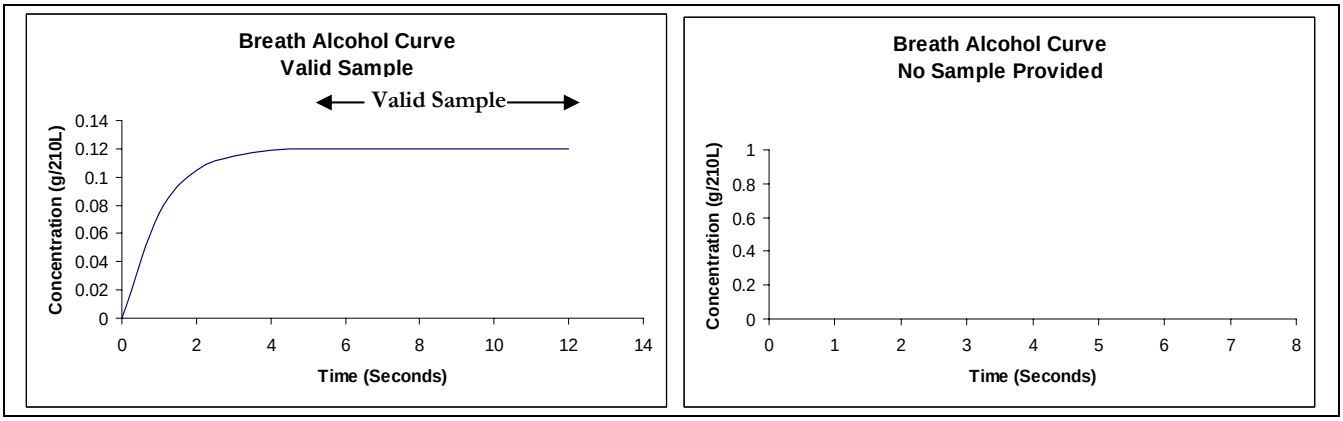


Scenario Four: A breath test with VOLUME NOT MET as a result.	
QUESTION	**SAMPLE ANSWER**
When conducting a breath test, you obtain a result of VOLUME NOT MET on the first breath sample. The instrument requested the second and third samples. The second and third samples were valid breath samples. The results on the Affidavit were: Sample #1 – VNM* Sample #2 – 0.112 Sample #3 – 0.115 *Volume Not Met – (0.065 – Breath sample not reliable for quantitative breath alcohol level) QUESTION: Why did you obtain VOLUME NOT MET on the first sample? QUESTION: Are the two breath samples you subsequently obtained reliable? QUESTION: Why is the VOLUME NOT MET result lower and not reliable?	ANSWER: The breath sample provided did not meet the minimum breath sample requirement of 1.1Liter. ANSWER: The two subsequent breath samples are reliable because all minimum acceptable breath sample requirements including volume were met. The two subsequent breath samples agree within 0.020 g/210L of each other which further shows that there was no problem with the slope of the subsequent samples obtained independently of each other. ANSWER: The VOLUME NOT MET result is lower because the subject had not provided a deep lung air breath sample when he/she stopped providing their sample. The result is not reliable because the instrument has not determined that there are no interferents or mouth alcohol in the sample provided.





Scenario Five: A breath test with NO SAMPLE PROVIDED as a result.	
QUESTION	**SAMPLE ANSWER**
When conducting a breath test, you obtain a result of NO SAMPLE PROVIDED on the first breath sample. The instrument requested the second and third samples. The second and third samples were valid breath samples. The results on the Affidavit were: Sample #1 – NSP* Sample #2 – 0.112 Sample #3 – 0.115 *No Sample Provided QUESTION: Why did you obtain NO SAMPLE PROVIDED on the first sample? QUESTION: Are the two breath samples you subsequently obtained reliable?	ANSWER: The subject did not provide a breath sample into the instrument within the three (3) minute time period allowed for each breath sampling process OR the subject did not provide a breath sample for at least one (1) second. It takes the instrument at least one (1) second to calculate a result therefore a result cannot be obtained if the subject provides a sample for less than one minute ANSWER: The two subsequent breath samples are reliable because the subject provided samples into the instrument and all minimum acceptable breath sample requirements including time were met. The two subsequent breath samples agree within 0.020 g/210L of each other which further shows that there was no problem with the slope of the subsequent samples obtained independently of each other.


Breath Alcohol Curve
Valid Sample
Valid Sample
Concentration (g/210L)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0 2 4 6 8 10 12 14
Time (Seconds)
Breath Alcohol Curve
No Sample Provided
Concentration (g/210L)
1
0.8
0.6
0.4
0.2
0
0 1 2 3 4 5 6 7 8
Time (Seconds)

Agency Inspector Course
Lesson Plan

Lesson Two
The Dynamics of Breath Testing

Review Questions

1. Describe how alcohol circulating in the body is excreted unchanged by the lungs.

2. Define deep lung air. How do you obtain deep lung air?

3. What are the minimum acceptable breath sample requirements for the Intoxilyzer 8000?

4. Draw and explain the breath alcohol curve.

5. What would a breath alcohol curve look like for a breath sample with mouth alcohol analyzed using an Intoxilyzer 8000?

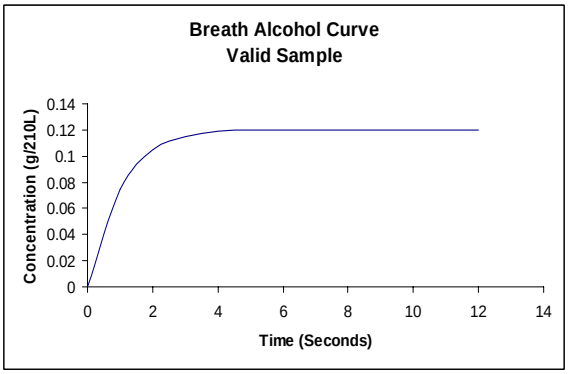
6. What is the purpose of obtaining two breath samples within fifteen minutes of each other that produce results within 0.020 g/210L?

Agency Inspector Course
Lesson Plan

Lesson Two
The Dynamics of Breath Testing

Review Answers

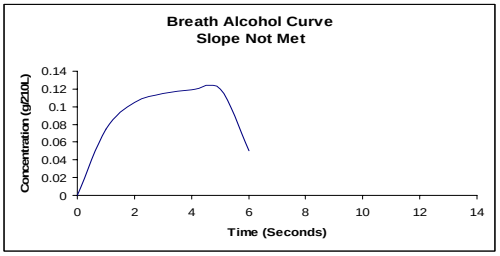
1. Describe how alcohol circulating in the body is excreted unchanged by the lungs.
   - The transfer of alcohol and other volatile substances from the blood to the breath occurs in the alveoli of the lungs. Alveoli are the thin-walled sacs that fill the lungs and allow for gas and volatile substances to pass from the blood into the lungs and from the lungs into the blood. Blood vessels are in direct contact with the alveoli.
   - Alcohol readily passes from the blood into the alveoli by a process called diffusion (automatic movement of a substance from an area of high concentration (blood) to an area of low concentration (lungs)) because alcohol is a low weight molecule and is volatile.
2. Define deep lung air. How do you obtain deep lung air?
   - Deep lung air is the breath that is coming from the deepest part of the lungs (near the alveoli) that can be obtained without collapsing the lungs. It can be best obtained by having the subject normally inhale and provide a continuous, sustained breath sample for as long as they possibly can.
   - A breath sample obtained from the upper portions of the respiratory tract (mouth, trachea, bronchi) is diluted with room air and will not provide an accurate representation of the alcohol concentration circulating in the subject's body.
3. What are the minimum acceptable breath sample requirements for the Intoxilyzer 8000?
   Time, Volume and Slope
4. Draw and explain the breath alcohol curve.



The breath alcohol curve is a graph of the alcohol concentration of a breath sample that occurs over time.

In order for a breath sample to be reliable, the concentration of the alcohol in the breath sample must rapidly rise and level off in the breath alcohol curve.

5. What would a breath alcohol curve look like for a breath sample with mouth alcohol analyzed using an Intoxilyzer 8000?



6. What is the purpose of obtaining two breath samples within fifteen minutes of each other that produce results within 0.020 g/210L?
   - The result of the second sample confirms the result of the first sample.
   - It shows that the two breath samples are as similar as possible to each other.
   - It shows that there are no interferents, mouth alcohol, and radio frequency interference affecting the results obtained from the breath samples.

Agency Inspector Course
Lesson Plan

Lesson Three
The Instrumentation

Introduction

The student will learn about the instrumentation used to analyze breath samples in accordance with Chapter 11D-8, FAC.

Objectives

METHOD OF ANALYSIS

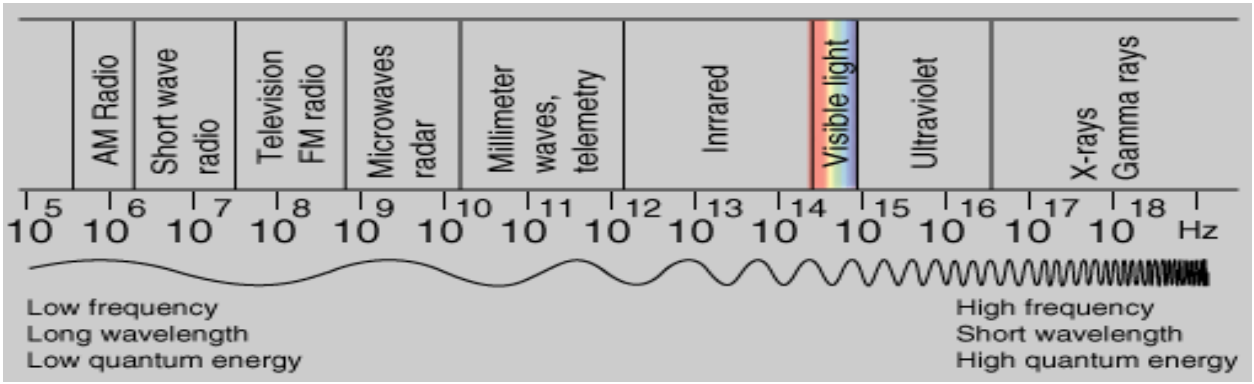
3.1 State the approved method for evidentiary breath testing is infrared light absorption.

- A method is a type of alcohol analyses approved by the Department to conduct chemical or physical tests of blood or breath.
- The Intoxilyzer 8000 uses the method infrared light absorption.

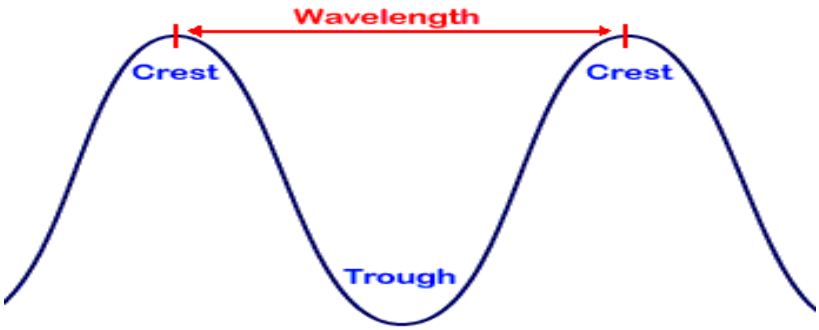
3.2 Define infrared light.

- Infrared light is not visible to the human eye
- Electromagnetic radiation or energy in the form of waves, relating to the range of invisible radiation wavelengths from about 0.75 micrometers, just longer than red in the visible spectrum, to 1 millimeter, on the border of the microwave region.
- The wavelengths of light the Intoxilyzer 8000 use fall within the Infrared region of the electromagnetic spectrum.

ELECTROMAGNETIC SPECTRUM

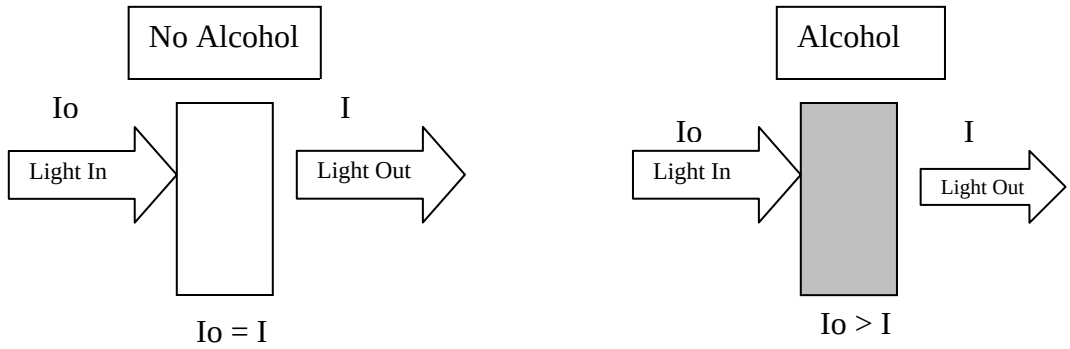


- A wavelength is the distance between one peak or crest of a wave of light and the next corresponding peak or crest.



3.3 Explain the method Infrared Light Absorption as it relates to breath alcohol analysis.

- Type of absorption methodology that uses the infrared light to identify and quantify alcohol.
- Alcohol molecules absorb infrared light in a unique and consistent manner.
- The wavelengths of infrared light that are absorbed depend on the different structural groups present on the molecule.
- When an alcohol molecule is exposed to infrared light, it will absorb specific wavelengths of the infrared light.
- The amount of infrared light absorbed is directly proportional to the concentration of the alcohol present in the breath. This relationship between the amount of infrared light absorbed and the amount of alcohol in the breath is a constant and will occur in the same proportions each and every time.
- When infrared light passes through the sample chamber, some of the light may be absorbed and the remainder transmitted through the sample. Absorbance can be defined as the logarithmic ratio of the amount of light detected when no alcohol is present in the sample chamber (Io) versus the amount of light detected when alcohol is present in the sample chamber (I) (Where I = intensity of light measured).
- $A = \log \frac{Io}{I}$



- The more alcohol molecules there are in the sample, the more light will be absorbed by these molecules, the less light will reach the detector and the higher the alcohol result will be.

3.4 State the scientific principle upon which the method infrared light absorption is based as the Beer-Lambert Law. Define the Beer-Lambert Law.

- The Beer-Lambert Law is defined as the linear relationship between the absorbance of infrared light by alcohol and the concentration of alcohol in the sample.
- The relationship is linear. As the alcohol concentration rises, the more infrared light will be absorbed.
- The absorbance of light by alcohol at a given wavelength is proportional to the absorptivity of the alcohol (e), the sample chamber path length (b), and the concentration of the alcohol (c).
- $A = c \times b \times e$
  - e = molar absorptivity constant (a constant for alcohol)
  - b = sample chamber path length (a constant in the instrumentation)
  - c = concentration of alcohol (can be calculated based on the amount of light absorbed)
- In breath or control testing, the absorbance (A) is measured by the instrument and the concentration (c) is then calculated giving the breath or control test result.

3.5 State another scientific principle that is used in the Intoxilyzer 8000 is Charles' Law. Define Charles's Law.

- The volume of a gas or vapor changes with temperature and pressure. A gas or vapor expands by the same fraction of its original volume with each degree that the temperature rises.
- This Law explains how a breath or control sample will expand to the entire volume of the sample chamber as long as the pressure and temperature remain constant.

INSTRUMENTATION

3.6 List the approved breath test instrumentation for evidentiary breath testing. Define evidentiary breath test instrument.

- Evidentiary Breath Test Instrument – a breath test instrument approved by the Department under Rule 11D-8.003, F.A.C., and used primarily to conduct alcohol breath tests pursuant to Florida law.

- The approved evidentiary breath test instruments in Florida that are currently used for evidentiary purposes is the:
  - CMI, Inc. Intoxilyzer 8000

3.7 State Rule 11D-8.004(1), Florida Administrative Code requires that the Department shall register and inspect a breath test instrument prior to such instrument being initially placed into evidentiary use by an agency.

- An instrument may not be used for evidentiary breath testing until it has been registered and inspected by the Department.

3.8 State Rule 11D-8.004(2), Florida Administrative Code requires that registered breath test instruments shall be inspected by the Department at least once each calendar year, and must be accessible to the Department for inspection. Any evidentiary breath test instrument returned from an authorized repair facility shall be inspected by the Department prior to being placed into evidentiary use. The inspection validates the instrument's approval for evidentiary use.

- The Department will inspect each evidentiary breath test instrument at least once each calendar year. An evidentiary breath test instrument returned from an authorized repair facility must be inspected by the Department before being placed into evidentiary use.

3.9 List and describe the major components of the Intoxilyzer 8000 that are used in obtaining and analyzing a breath or control sample.

Component/ Purpose	Intoxilyzer 8000
Breath Tube Delivers breath sample into the instrument	Thermostatically controlled at a nominal temperature of 45C to prevent condensation of the breath sample
Sample Chamber Where a sample is analyzed	Thermostatically controlled at a nominal temperature of 47C to prevent condensation of the breath sample
Light Source Produces light	Spiral filament. Emits only infrared light. Directly connected to one end of the sample chamber. Pulses light into sample chamber
Filters Filter infrared light at specific wavelengths. Used to identify alcohol	Two filters are directly connected to the sample chamber opposite the light source. Filters: 3 uM and 9 uM. 3 uM filter: used to detect the presence of interferents 9 uM filter: used to detect the presence of alcohol.
Detector Detects the light not absorbed by the alcohol in the sample	Two pyroelectric detectors. Each detector is directly connected to a filter. Determines the amount of light not absorbed by the alcohol in the sample and converts this response into an electrical response.
Microprocessor Calculates the amount of alcohol in a sample based on the electrical response received from the detector	Calculates the result in g/210L based on the electrical response from the 3 uM filter and the 9 uM filter. These results are compared to each other to ensure interferents are not present. The result from the 9 uM filter is displayed and printed as the result.

3.10 Identify and define the hardware of the Intoxilyzer 8000.

Component	Intoxilyzer 8000
Mouthpiece	The disposable, plastic trap that fits on the end of the breath tube through which the subject provides the breath sample.
Display	The screen on the front of the instrument which contains a two line (twenty characters per line) florescent display that is used to visually communicate messages and instructions to the user.
Start Test Button	The green push pad on the front of the instrument that is used to initiate a breath test sequence and to bring the instrument from STANDBY MODE to READY MODE.
Power Switch	The black rocker switch on the back of the instrument used to turn the instrument on and off when plugged into a wall outlet.
Keyboard	Used to provide a direct user interface with the instrument.
Printer Paper Door	The removable door on top of the instrument which covers the thermal printer and paper.
External Printer Port	The printer port on the back of the instrument where the external printer is attached.

Calibration Inlet	The female connection fitting on the right side of the instrument where the external dry gas standard cylinder tubing is connected.
Gas Power/ Interface Connector	The female connector on the lower back of the instrument where the dry gas standard cylinder regulator wiring connects.
Paper Feed Button	The black push pad on the front of the instrument used to advance the paper in the internal printer.
Dry Gas Standard Cylinder Carrier	The metal and plastic bracket that attaches to the bottom of the instrument that secures the cylinder and protects the regulator.
Regulator Valve	The valve that attaches to the top of the dry gas cylinder and indicates the pressure in the cylinder.
Internal Printer	Thermal printer located inside the top of the instrument. The instrument will automatically sense the absence of an external printer and default printing to the internal printer.
DC Power-In Socket	The round threaded connector located on the upper left rear of the instrument used to connect the DC power plug.
AC Power In-Socket	Socket on the rear of the instrument where the power cord is plugged into.
Fuse Holder	The round fuse holder on the rear of the instrument that holds the 5mm 250V/6.3 amp circuit protection fuse.
Modem Line Connector	The standard telephone jack located on the rear of the instrument used to connect the internal modem to a telephone jack.
Internal Modem	The device used to transmit information to and from the instrument to a host computer.

3.11 State the Intoxilyzer 8000 visually communicate by displaying messages and by sounding three distinct tones.

- When a message is displayed, the breath test operator is expected to perform the action being requested or take action based on the message displayed.
- The three distinct tones are:
  - Beep – a beep sounds after the completion of each operation.
  - Continuous Tone – a continuous tone sounds while a subject blows into the instrument with sufficient pressure.
  - Low/High Tone – a low/high tone sounds in the event of a malfunction, incorrect operational procedure, or unfulfilled test requirement.

3.12 Describe the different ways to power, initialize warm up and access READY MODE for the Intoxilyzer 8000.

	Intoxilyzer 8000
Power	110 volt AC (a wall outlet) and 12 volt DC (a car or boat cigarette lighter)
Initialize Warm Up	Push the power button on the back of the instrument if the instrument is plugged into a wall outlet. If the instrument is being powered by 12 volt DC it will automatically turn on. Push the green start test button to initialize warm up. It will take approximately twenty (20) minutes for the instrument to warm up. The instrument will display NOT READY. During the last five (5) minutes of the warm up phase, the instrument will begin a countdown of the time remaining for warm up to complete. The instrument will conduct diagnostic checks after warming up and before going into READY MODE.
READY MODE	The instrument is ready for use when "READY MODE" and the message to push the start test button displays on the instrument. Push the green start test button to begin a breath test.
STANDY BY MODE	If the start test button is not pushed within approximately thirty (30) minutes after coming into READY MODE, the instrument will go into STANDBY MODE. To bring the instrument to READY MODE, push the start test button. After approximately one (1) minute, the instrument will perform diagnostic checks before to returning to READY MODE.

3.13 State a diagnostic check will occur on an Intoxilyzer 8000 before the instrument comes out of NOT READY MODE. Explain the Diagnostic Checks that are performed on each instrument. Explain DIAGNOSTIC OK and the actions the operator must take when a failure occurs during a diagnostic check.

Intoxilyzer 8000

- Internal Printer Check – Checks for paper, proper power, empty data buffer, and mechanism movement.
- RTC Test – Real Time Clock Test. Checks for valid date and time. This is not necessarily the correct date and time.
- DSP Test – Digital Signal Processor Test. Verifies IR source function, source signals within limits, inter-processor communication, and proper processor voltage/current.
- Analytical Test – Verifies stability and range of filters
- EEPROM Test – (EEPROM stands for Electronically Erasable Programmable Read Only Memory) Tests for proper checksums of all contents for validity (calibration, settings, location, and serial number)
- Volt/Current Test – Tests for proper voltage and current at all source levels. Also checks flow sensor and barometric pressure sensor.
- RAM Test – Checks operating system RAM status.
- Internal Modem Test – Tests internal modem for proper operation.
- Temperature Regulation Test – Checks for proper temperatures and thermistor operation.

When DIAGNOSTIC OK is displayed, the instrument's analytical components and operational standards are working properly. The instrument will enter READY MODE.

If a diagnostic check fails, the instrument will display DIAGNOSTIC FAIL. The Agency Inspector should begin the agency inspection again and the instrument will conduct another Diagnostic Check.

- If DIAGNOSTIC OK is obtained, the instrument will enter READY MODE. Continue with the agency inspection procedures.
- If DIAGNOSTIC FAIL is obtained again, the instrument will abort the agency inspection process. The agency inspector must note "Does Not Comply" on the agency inspection report and notify the Department Inspector.

3.14 Describe and understand how to access the breath test operator and agency inspector menus of the Intoxilyzer 8000 and how to upload breath tests and agency inspections.

- The three level menu is used to allow features and functions to be changed or initiated. Enter User last name and first name and middle initial when prompted. Only the first level, for breath test operators, is <u>not</u> password protected. Unique passwords are required for the other two levels. The levels are 1 - breath test operator ; 2 - agency inspector; and 3 - department inspector.
- The instrument uses the detachable keyboard for a direct user interface in selecting functions and modes.
- Press ESC, ESC. This will access the Breath Test Operator menu. The breath test operator menu consists of the following:
  - ✓ R – Recall Test
    - To recall a breath test, the operator must PAGE UP or PAGE DOWN to the record date. The instrument will show the number of records for that date. The operator must then scroll through the list by subject last name and retrieve the record they would like to print by pressing the enter key. The RIGHT ARROW will show the subject's first name. An external printer must be attached. The Breath Alcohol Test Affidavit will automatically print to the external printer.
  - ✓ S – Gas Cylinder Change
    - After changing the dry gas standard cylinder, the operator must enter the Cylinder Lot # and press enter; and then must enter the Expiration Date and press enter.
- Then press 2 to access the agency inspector menu.
  - When access to the agency inspector menu is requested, the agency inspector will be asked to enter a password.
  - The agency inspector can move through the agency inspector menu by moving the cursor under the desired letter and pressing ENTER.
  - If there is no activity via the keyboard after a function has completed within two (2) minutes, the instrument will return to Ready Mode and the password must be re-entered.
  - The agency inspector menu consists of the following:
    - ✓ E – Set Date and Time
      - Date must be entered MM/DD/YYYY
      - Time must be entered HH:MM:SS

- ✓ D – Diagnostic
  - Auto Run of Diagnostic and prints results
  - Initiates a diagnostic routine which checks or tests the following and prints the results:
    - ✓ Internal Printer, Real Time Clock, Digital Signal Processor, Analytical Check, EEPROM, Volt/Current, RAM, Internal Modem and Temperature.
- ✓ G – Tank Monitor
  - Shows the pressure remaining in the dry gas standard cylinder
- ✓ S – Gas Cylinder Change
  - Used for changing the dry gas standard cylinder and allow input of the cylinder's lot number and expiration date.
  - After changing the dry gas standard cylinder, the agency inspector must enter the Cylinder Lot # and press enter, and then must enter the Expiration Date and press enter.
- ✓ I – Inspection Test
  - Auto-Routine of Agency Inspection
  - Sets instrument into agency inspection mode and automatically prompts the agency inspector to follow a required series of steps.
- ✓ R – Recall Test
  - To recall an agency inspection, the agency inspector must PAGE UP or PAGE DOWN to the record date of the agency inspection. The agency inspector must then scroll through the list by date until the correct date appears. The agency inspector can print the Agency Inspection Report – Intoxilyzer 8000 by pressing the enter key when the correct date is highlighted. An external printer must be attached in order to print the report.
- ✓ C = Comms Transfer
  - Used to upload all breath tests and any agency inspection that is not uploaded at the time of the agency inspection.
  - Move the cursor under C and press ENTER. Ensure the instrument is connected to a phone line.
  - Enter or verify the telephone number to the database in Tallahassee and press ENTER.
  - All information will automatically be uploaded to the database in Tallahassee. The instrument will notify the agency inspector if the data was successfully uploaded.
- ✓ T – Control Testing
  - Control Testing. Press enter for Submenu
    - ✓ D – Dry Control Test. Sets the instrument to analyze the dry gas standard. Auto Run of single dry gas standard test and prints results.
    - ✓ W – Wet Control Test. Sets the instrument to analyze a simulator. Auto Run of single reference sample device (simulator) test and prints results.
    - ✓ I – Internal Control Test. Auto Run of ITP Check at 0.08 g/210L and prints results.
    - ✓ S – Stability Test. Sets the instrument to do the user selected number of control tests. Select Cal (D/W/I), press enter, enter the number of checks to run and press enter. The instrument will perform the requested number of tests and print the results.
- ✓ Z = Change Password
  - Move cursor under Z and press ENTER. "Enter Password" will be displayed. The agency inspector will enter their password and press ENTER. The instrument will save the password.

INTOXILYZER 8000 MAINTENANCE

3.15 State the type of maintenance that can be performed by any breath test operator and by any agency inspector.

- Any maintenance of an Intoxilyzer 8000 can be performed without opening the top cover of the instrument.

- The breath test operator can change the dry gas cylinder and replace the internal printer paper.
- In addition to the above maintenance a breath test operator can perform, the agency inspector can also:
  - ✓ Visually inspect the exterior of the instrument – The agency inspector should clean with damp cloth if necessary
  - ✓ Check the power cord and the electrical outlet - the agency inspector should check power cord(s) for tears, frayed or exposed wiring, broken or loose prongs and replace if necessary. The agency inspector should also check the wall outlet for power.
  - ✓ Check and replace the external circuit protection fuse – If the instrument's power light will not come on, the agency inspector should check and/or replace the external circuit protection fuse. If the fuse is blown, replace it with the proper fuse. If the fuse immediately blows again, contact a Department Inspector or send the instrument to an authorized repair facility.
    - Prior to checking or replacing the fuse, turn the instrument power switch off and disconnect the power cord from the source of power.
    - To remove the fuse, insert a small screwdriver in the slot located in the fuse cap and carefully turn counterclockwise. It should take approximately 2.5 turns to unseat the cap.
    - Pull the fuse from the cap and verify it is indeed blown. If the fuse is not blown, the problem lies elsewhere in the instrument or power supply the instrument is plugged into.
    - Insert a new fuse of the proper rating (5mm, 250V6.3A) into the cap, insert cap/fuse assembly into the fuse socket, and carefully turn clockwise until seated.
  - ✓ Check external breath tube – The agency inspector should check the external breath tube for tears, loose connector plug and ensure it is warm to the touch.
  - ✓ Update date and time.
  - ✓ Check the instrument display and case for cracks – The agency inspector should check the instrument case and display window for cracks and other damage.
  - ✓ Check the keyboard and its connections - the agency inspector should check the keyboard cable and plug for tears or frays and snug connection. Also check the keyboard for damage and loose or missing keys. If damage is found to the keyboard or cable, remove and/or replace with another mini keyboard. A full size PS/2 keyboard can be used in lieu of the mini keyboard.
  - ✓ Check the dry gas standard cylinder connections - the agency inspector should check the dry gas standard cylinder carrier connections.
    - If loose, tighten the mounting screws with a #2 Phillips screw driver.
    - The agency inspector should check the dry gas standard cylinder control valve for damage.
    - The agency inspector should check the electrical connector for the dry gas standard cylinder control valve to the instrument for snugness and damage. The valve and connector is one unit.

3.16 Describe the procedure to replace internal printer paper or clear internal printer jams.

- Replacing or clearing the paper from the internal printer does not require menu access.
  - Remove printer paper door by lifting from the top of the instrument.
  - Pull green lever forward until it locks. Remove remaining paper.
  - Holding the new roll of paper with the paper spooling from the bottom, slip the leading edge of the paper underneath the rear of the black rubber roller downwards until the leading edge slides under the black roller and out the front. Place the paper roll into the paper roll holder.
  - Push the green lever up and backwards until it points straight up.
  - Feed the paper through the slot on the printer paper door.
  - Place the printer cover on the instrument and depress the black knob until it locks into place.

3.17 Describe how and when to replace the dry gas standard cylinder.

- The reasons for changing or removing the dry gas standard cylinder include: (1) the cylinder is below minimum pressure; (2) the cylinder is beyond its expiration date; and (3) shipment of the instrument to an authorized repair facility.
- Breath Test Operators and Agency Inspectors may change the dry gas standard cylinder.
- The instrument will alert the operator to a low pressure/volume dry gas standard cylinder condition. This alert will occur when the dry gas standard cylinder pressure volume reaches approximately 50 psi (pounds per square inch). This pressure volume is sufficient to allow five (5) more complete breath tests to be conducted.

The cylinder must be replaced as soon as possible. No tests can be conducted if the cylinder tank pressure is below 25 psi.

- The cylinder disconnects from the valve assembly by being turned counterclockwise, and reconnects by being turned clockwise.
- When seating the cylinder, it must be manually tightened to prevent leaks.
- Once the cylinder is changed, the lot number and expiration date must immediately be entered by accessing the breath test operator or agency inspector menu.

Agency Inspector Course
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Lesson Three
The Instrumentation

Review Questions

1. Define method. What is the approved method for evidentiary breath testing?

2. What is infrared light?

3. What is a wavelength?

4. Explain infrared light as it relates to breath alcohol analysis.

5. What is the Beer Lambert Law?

6. What is Charles' Law?

7. What is the approved evidentiary breath test instrument currently in use in Florida?

8. What does DIAGNOSTIC OK mean?

9. What are the three distinct tones the Intoxilyzer 8000 use to communicate with the operator?

Agency Inspector Course
Lesson Plan

Lesson Three
The Instrumentation

Review Answers

1. Define method. What is the approved method for evidentiary breath testing?
   - A method is a type of alcohol analyses approved by the Department to conduct chemical or physical tests of blood or breath.
   - The Intoxilyzer 8000 use the method infrared light absorption.
2. What is infrared light?
   - Infrared light is not visible to the human eye
   - Electromagnetic radiation or energy in the form of waves, relating to the range of invisible radiation wavelengths from about 0.75 micrometers, just longer than red in the visible spectrum, to 1 millimeter, on the border of the microwave region.
3. What is a wavelength?
   - A wavelength is the distance between one peak or crest of a wave of light and the next corresponding peak or crest.
4. Explain infrared light as it relates to breath alcohol analysis.
   - Type of absorption methodology that uses the infrared light to identify and quantify alcohol.
   - Alcohol molecules absorb infrared light in a unique and consistent manner.
   - The wavelengths of infrared light that are absorbed depend on the different structural groups present on the molecule.
   - When an alcohol molecule is exposed to infrared light, it will absorb specific wavelengths of the infrared light.
   - The amount of infrared light absorbed is directly proportional to the concentration of the alcohol present in the breath. This relationship between the amount of infrared light absorbed and the amount of alcohol in the breath is a constant and will occur in the same proportions each and every time.
5. What is the Beer Lambert Law?
   - The Beer-Lambert Law is defined as the linear relationship between the absorbance of infrared light by alcohol and the concentration of alcohol in the sample.
   - The relationship is linear. As the alcohol concentration rises, the more infrared light will be absorbed.
6. What is Charles' Law?
   - The volume of a gas or vapor changes with temperature and pressure. A gas or vapor expands by the same fraction of its original volume with each degree that the temperature rises.
   - This Law explains how a breath or control sample will expand to the entire volume of the sample chamber as long as the pressure and temperature remain constant.
7. What is the approved evidentiary breath test instrument currently in use in Florida?
   CMI, Inc. Intoxilyzer 8000
8. What does DIAGNOSTIC OK mean?
   When DIAGNOSTIC OK is displayed, the instrument's analytical components and operational standards are working properly. The instrument will enter READY MODE.
9. What are the three distinct tones the Intoxilyzer 8000 use to communicate with the operator?
   - Beep – a beep sounds after the completion of each operation.
   - Continuous Tone – a continuous tone sounds while a subject blows into the instrument with sufficient pressure.
   - Low/High Tone – a low/high tone sounds in the event of a malfunction, incorrect operational procedure, or unfulfilled test requirement.

Agency Inspector Course
Lesson Plan

Lesson Four
The Reference Sample Device, Alcohol Reference Solutions and the Dry Gas Standard

Introduction

During this lesson, the student will learn about the reference sample device and how to properly operate the device. The student will also learn the purpose and use of alcohol reference solutions and dry gas standard as they apply to the agency inspection process.

Objectives

REFERENCE SAMPLE DEVICE

4.1 Define Reference Sample Device.

- Reference Sample Device – a device, also known as a simulator, that produces a known vapor concentration by the passage of air through a liquid. It is designed to provide a temperature controlled headspace vapor sample of known concentration.
- The reference sample device, or simulator, is used during an agency inspection to conduct the alcohol free test, the alcohol free with acetone test, and to analyze the alcohol reference solutions.
- It must be operated at 34C +/- 0.2C and have an air leak resistant seal.

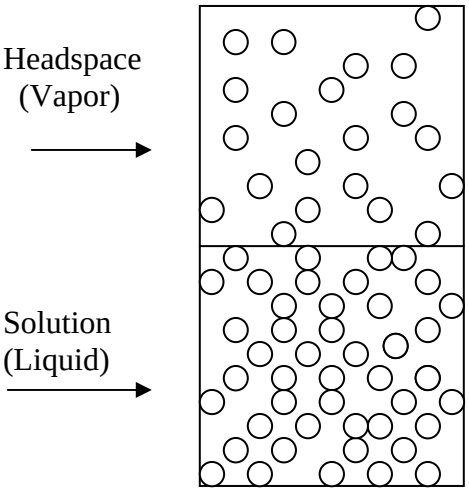
4.2 State the temperature of the reference sample device must be maintained at 34C +/- 0.2C.

- The minimum operating temperature is 33.8C and the maximum operating temperature is 34.2C.

4.3 State the reference sample device must have an air-leak resistant seal.

- The agency inspector must also ensure that the simulator has an air-leak resistant seal. The simulator can be checked for an air-leak resistant seal by performing the following steps:
  - Blow through the in-take port of the simulator. The agency inspector should notice bubbling.
  - The agency inspector should then cover the vapor exit port with their finger and the bubbling should stop.
  - The agency inspector should continue blowing after uncovering the vapor exit port to prevent the solution from escaping from the in-take port.
  - If leaks are present, the agency inspector should take measures to ensure proper seal such as re-positioning the simulator head or changing the simulator O-ring.
  - If proper seal cannot be obtained, the agency inspector should not use the simulator.

4.4 State the scientific principle upon which a reference sample device operates as Henry's Law. Define Henry's Law.



- Henry's Law is defined as the concentration in the headspace vapor above a solution is directly proportional to the concentration of that solution at a specific temperature.
- Henry's Law is applied to the reference sample device by the following:
  - The concentration of alcohol in the vapor phase located in the headspace of the simulator will be proportional to the concentration of alcohol in the liquid phase of the simulator at a specific temperature (34+/- 0.2C).
  - This partitioning of alcohol between the liquid phase and the vapor phase in the headspace will occur the same each and every time as long as the temperature remains 34 +/- 0.2C.

4.5 Describe the proper use of the reference device.

- The simulator must be clean and dry prior to its use.
- The agency inspector should check the top of the simulator jar for chips and cracks.
- The water or solution is placed into the jar of the reference sample device. Approximately 500 mL of water or solution is required to ensure the simulator does not overheat.
- After placing the water or solution into the simulator, attach the top by screwing it onto the jar. Ensure no cross threading has occurred and an air-leak resistant seal has been obtained.
- Plug the power cord into an electrical outlet. If applicable, turn on the power switch to the reference sample device.
- After turning the device on, observe the device to ensure the mixing paddle is rotating so that proper distribution of the sample and consistent temperature of the solution is maintained.
- The agency inspector must monitor the reference sample device temperature to ensure that the temperature of 34 +/- 0.2C is achieved and maintained.
- The agency inspector must be aware that some reference sample devices use a mercuric glass thermostat and/or reference thermometer. The thermostat and/or thermometer may become inoperative due to the separation of the mercury column. If this occurs, contact a repair facility capable of conducting maintenance on the particular brand of reference sample device. The thermostat and/or thermometer must be checked periodically for mercury separation.
- The agency inspector must use a thermometer that measures, at a minimum, to the tenth of a degree. It is recommended that the thermometer is traceable to the National Institute of Standards and Technology.
- After the agency inspection is complete, the agency inspector must clean and dry the reference sample device and store it in a safe, secure environment.

ALCOHOL REFERENCE SOLUTION

4.6 Define Alcohol Reference Solution.

- Alcohol Reference Solution – a standard used to verify the calibration of a breath test instrument consisting of a mixture of alcohol and distilled or deionized water that will produce a known alcohol vapor concentration at a specific temperature
  - The analysis of alcohol reference solutions during an agency inspection ensures the instrument is properly calibrated and is providing accurate and reliable results.

4.7 State only alcohol reference solution lots from an approved source and approved by the Department shall be used in agency inspections within two (2) years of the date of manufacture.

- The Department will approve the source (manufacturer) of alcohol reference solutions. An agency inspector must use alcohol reference solutions that are prepared by the approved source.
- The Department will approve lots of alcohol reference solutions. An agency inspector must use lots of alcohol reference solution that have been approved by the Department. The Department will notify each agency inspector of the lots of alcohol reference solution that have been approved. A list of approved alcohol reference solution lot numbers can also be found on the Alcohol Testing Program website www.fdle.state.fl.us/atp.
- Each bottle of alcohol reference solution is marked with an expiration date. This date is two years from the date of manufacture. The agency inspector must not use alcohol reference solution beyond the date of expiration.
- Before using alcohol reference solution, inspect the bottles prior to their use to ensure they have not been opened or tampered with. Check the lot number to ensure it is an approved lot and expiration date to ensure the solution has not expired.

4.8 State when changing solutions during an agency inspection, the agency inspector should dispose of the used solution, rinse the glass jar and thoroughly dry all components before adding new solution.

- The agency inspector must not save and/or use the same solutions from month to month.
- Fresh solutions must be used for each month's inspection.

4.9 Define the Acceptable Range for the 0.05, 0.08, and 0.20 g/210L Alcohol Reference Solution.

- 0.05 g/210L Alcohol Reference Solution: 0.045 to 0.055 g/210L.
- 0.08 g/210L Alcohol Reference Solution: 0.075 to 0.085 g/210L.
- 0.20 g/210L Alcohol Reference Solution: 0.190 to 0.210 g/210L.

4.10 Define Dry Gas Standard.

- Dry Gas Standard – a standard consisting of a mixture of alcohol and gas which produces a known alcohol vapor concentration used to verify the calibration of a breath test instrument
  - The analysis of dry gas standard during an agency inspection ensures the instrument is properly calibrated and is providing accurate and reliable results.
  - The analysis of dry gas standard during a breath test ensures that the instrument is properly calibrated and is providing accurate and reliable results at the time of each breath test.

4.11 State dry gas standard cylinders produced by the approved source must not be used beyond the expiration date.

- The Department will approve the source (manufacturer) of dry gas standards.
- The Department will not approve individual lots of dry gas standard.
- The agency inspector must use dry gas standard from an approved source, must maintain the Certificate of Analysis for the lot(s) used, and must not use the dry gas standard beyond its expiration date.

4.12 Define the acceptable range for the 0.08 g/210L dry gas standard.

- 0.08 g/210L dry gas standard: 0.075 to 0.085 g/210L

Agency Inspector Course
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Lesson Four
The Reference Sample Device, Alcohol Reference Solutions and Dry Gas Standard

Review Questions

1. What is a reference sample device?

2. What is the required operational temperature of a reference sample device?

3. How do you check a reference sample device for an air-leak resistant seal?

4. What is Henry's Law?

5. What is an alcohol reference solution?

6. What are the three requirements that must be met before an alcohol reference solution may be used?

7. What is a dry gas standard?

8. What are the two requirements that must be met before a dry gas standard may be used?

Agency Inspector Course
Lesson Plan

Lesson Four
The Reference Sample Device, Alcohol Reference Solutions and Dry Gas Standard

Review Answers

1. What is a reference sample device?
   A device, also known as a simulator, that produces a known vapor concentration by the passage of air through a liquid.
2. What is the required operational temperature of a reference sample device?
   34C +/- 0.2C (33.8C to 34.2C)
3. How do you check a reference sample device for an air-leak resistant seal?
   - Blow through the in-take port of the simulator.
   - The agency inspector should notice bubbling.
   - The agency inspector should then cover the vapor exit port with their finger and the bubbling should stop.
   - The agency inspector should continue blowing after uncovering the vapor exit port to prevent the solution from escaping from the in-take port.
   - If leaks are present, the agency inspector should take measures to ensure proper seal such as re-positioning the simulator head or changing the simulator O-ring.
   - If proper seal cannot be obtained, the agency inspector should not use the simulator.
4. What is Henry's Law?
   - Henry's Law is defined as the concentration in the headspace vapor above a solution is directly proportional to the concentration of that solution at a specific temperature.
5. What is an alcohol reference solution?
   - Alcohol Reference Solution – a standard used to verify the calibration of a breath test instrument consisting of a mixture of alcohol and distilled or deionized water that will produce a known alcohol vapor concentration at a specific temperature
     - The analysis of alcohol reference solutions during an agency inspection ensures the instrument is properly calibrated and is providing accurate and reliable results.
6. What are the three requirements that must be met before an alcohol reference solution may be used?
   - Approved source
   - Department approved
   - Un-expired
7. What is a dry gas standard?
   - Dry Gas Standard – a standard consisting of a mixture of alcohol and gas which produces a known alcohol vapor concentration used to verify the calibration of a breath test instrument
     - The analysis of dry gas standard during an agency inspection ensures the instrument is properly calibrated and is providing accurate and reliable results.
     - The analysis of dry gas standard during a breath test ensures that the instrument is properly calibrated and is providing accurate and reliable results at the time of each breath test.
8. What are the three requirements that must be met before a dry gas standard may be used?
   - Approved source
   - Un-expired
   - Maintain Certificate of Analysis for each lot used.

Agency Inspector Course
Lesson Plan

Lesson Five
Conducting the Agency Inspection

Introduction

During this lesson the student will learn the proper way to conduct an agency inspection of an Intoxilyzer 8000 in accordance with Chapter 11D-8, Florida Administrative Code.

Resources

Chapter 11D-8, Florida Administrative Code
FDLE/ATP Form 39 Agency Inspection Procedures – Intoxilyzer 8000
FDLE/ATP Form 40 Agency Inspection Report – Intoxilyzer 8000

Objectives

5.1 Define Acceptable Range, Accuracy, Acetone Stock Solution, Alcohol, Alcohol Free Test, Authorized Repair Facility, and Mouth Alcohol Solution.

- Acceptable Range – the results of alcohol reference solutions and dry gas standard analyses which fall within the following ranges of alcohol vapor concentration: 0.05 g/210L range is 0.045 to 0.055 g/210L; 0.08 g/210L range is 0.075 to 0.085 g/210L; 0.20 g/210L range is 0.190 to 0.210 g/210L
  - The results of alcohol reference solution and dry gas standard analyses during an agency inspection must fall within the acceptable range for that solution.
- Accuracy – the nearness of a measurement to a known concentration
  - During an agency inspection, the agency inspector is checking the accuracy and proper operation of the instrument.
- Acetone Stock Solution – A mixture of acetone and distilled or deionized water provided by the Department
- Alcohol – ethyl alcohol, also known as ethanol
  - Ethanol is the alcohol contained in alcoholic beverages.
- Alcohol Free Test – a result of 0.000 g/210L when using distilled or deionized water
- Authorized Repair Facility – The Department, or an entity authorized by the breath test instrument manufacturer to service and repair such breath test instrument
- Mouth Alcohol Solution – a mixture of alcohol and distilled or deionized water provided by the Department.

5.2 State evidentiary breath test instruments shall be inspected by an agency inspector at least once each calendar month. The agency inspection shall be conducted in accordance with Agency Inspection Procedures – Intoxilyzer 8000 FDLE/ATP Form 39 for the Intoxilyzer 8000.

- When using an Intoxilyzer 8000, the breath test operator must note the date of the agency inspection when answering user questions during the administration of the breath test. The agency inspector will provide this information to the breath test operator each calendar month.
  - The agency inspection date will automatically be recorded by the instrument during the agency inspection process. The agency inspector should also post the most current agency inspection date in a location so the breath test operator can verify this date during a breath test.

5.3 State whenever an instrument is taken out of evidentiary use the agency shall conduct an agency inspection. The agency shall also conduct an agency inspection prior to returning an instrument to evidentiary use.

5.4 State evidentiary breath test instruments shall only be accessible to a person issued a valid permit by the Department and to persons authorized by a permit holder and will be kept clean and dry. This section does not prohibit agencies from sending an instrument to an authorized repair facility.

- The purpose of this rule is to ensure that an evidentiary breath test instrument is not misused or damaged.

5.5 State each agency shall maintain the following records for at least three years from the last entry date: agency inspection reports and agency inspection print cards, breath test logs, and breath test instrument

repair records. The breath test instrument registration shall be retained by an agency for at least three years after the instrument is removed from evidentiary use. Dry gas standard certificates of analysis shall be retained by an agency for at least three years after receipt. The above records shall be accessible to the Department upon request. The purpose of this section is solely for regulatory and administrative use, and any violation of this section shall not affect the admissibility, validity or reliability of breath test results.

Intoxilyzer 8000

5.6 State to conduct an agency inspection on an Intoxilyzer 8000, the agency inspector will need an Intoxilyzer 8000, alcohol reference solution, dry gas standard, a minimum of two properly operating reference sample devices (simulator), mouth alcohol solution, distilled or deionized water, class "A" glass 3ml pipette, acetone stock solution, ¼ inch ID tygon tubing, tubing connectors, mouthpieces, external printer, and a copy of FDLE/ATP Form 39, Agency Inspection Procedures – Intoxilyzer 8000.

5.7 An agency inspection of an Intoxilyzer 8000 must be conducted in accordance with FDLE/ATP Form 39, Agency Inspection Procedures – Intoxilyzer 8000 and the results recorded on FDLE/ATP Form 40, Agency Inspection Report – Intoxilyzer 8000.

- The agency inspector must never open the top cover of an Intoxilyzer 8000. There are no user serviceable parts inside.
- The agency inspection must be conducted in a facility with an external printer attached.
- The dry gas standard cylinder used must not contain less than 50 psi of pressure. Replace if the cylinder is below this pressure. The instrument will also inform the Agency Inspector if there is insufficient pressure to conduct an agency inspection.
- The agency inspector must verify the lot numbers and expiration dates of the alcohol reference solutions being used to determine that only approved and un-expired alcohol reference solutions are being used. The agency inspector must verify that the dry gas standard being used is from an approved source and un-expired.
- Simulators and dry gas standard cylinders are connected to the calibration inlet via a quick connect.
- The simulator return port is only used for vapor return to a simulator. It is not used with a dry gas standard cylinder.

5.8 Describe and explain each step of FDLE/ATP Form 39, Agency Inspection Procedures – Intoxilyzer 8000.

- The Intoxilyzer 8000 has the agency inspection routine automatically programmed to closely follow FDLE/ATP Form 39 Agency Inspection Procedures – Intoxilyzer 8000.

FDLE/ATP Form 39 Agency Inspection Procedures – Intoxilyzer 8000

Step	Procedure	Description
1	• Prepare at least two simulators for use and allow them to warm up for at least thirty minutes prior to the first analysis. • When changing solutions, allow the new solution to warm up for at least ten minutes after the heater light turns off for the first time. • Ensure that each simulator maintains an air leak resistant seal and an operational temperature of 34 C (+/- 0.2 C).	
2	Only distilled or deionized water must be used for the Alcohol Free Test and the Interferent Detect Test. Class A glassware must be used when measuring solutions.	
3	Only approved and non-expired alcohol reference solution and non-expired dry gas standard from an approved source must be used during the applicable portions of the inspection.	
4	• Press ESC twice to access the main menu. Enter Agency Inspector last name, first name and middle initial at USER prompts. • Press the 2 key to access the Agency Inspector menu. Enter password. • Scroll to Inspection Test and press ENTER. Enter Agency Inspector last name, first name and middle initial at INSPECTOR prompts.	
5	• All results are reported to three decimal places in g/210L. • The result must be 0.000 for each air blank. The instrument will abort the inspection process if the air blank result is not 0.000.	

	• If any test is out of compliance the instrument will prompt the Agency Inspector to REPEAT (Y/N) the test. Each test may only be repeated once.
	• If a test must be repeated, the REASON must be entered when prompted and recorded in the Remarks section of FDLE/ATP Form 40 Agency Inspection Report – Intoxilyzer 8000.
	  • Verify DATE. Adjust if necessary. Press ENTER. Verify TIME. Adjust if necessary. Press ENTER.
	  • DIAGNOSTIC CHECK (Pre-Inspection). Press ENTER. The result must be OK for each diagnostic check. If any diagnostic check is not OK, the instrument will abort the inspection process.
	  • NUMBER OF SIMULATORS USED. Enter the number of simulators used during the inspection.
	  • ALCOHOL FREE SUBJECT/MOUTH ALCOHOL TEST. Press ENTER. When PROVIDE SAMPLE NOW is displayed, introduce an alcohol-free breath sample into the instrument. The result must be 0.000. Rinse mouth with mouth alcohol solution. When PROVIDE SAMPLE NOW is again displayed introduce a breath sample into the instrument. The result must be SLOPE NOT MET.
	  • ALCOHOL FREE TEST. Attach a simulator containing 500 mL distilled or deionized water to the instrument. Press ENTER. Conduct three (3) analyses. The result must be 0.000 for each analysis.
	  • INTERFERENT DETECT TEST. Attach a simulator containing 3 mL of acetone stock solution and 500 mL distilled or deionized water to the instrument. Press ENTER. Conduct three (3) analyses. The result must be INTERFERENT DETECT for each analysis.
	  • 0.05 g/210L TEST. Attach a simulator containing 0.05 g/210L alcohol reference solution to the instrument. Press ENTER. Enter the lot number and expiration date of the alcohol reference solution used. Conduct three (3) analyses. The result of each analysis must be within the acceptable range.
	  • 0.08 g/210L TEST. Attach a simulator containing 0.08 g/210L alcohol reference solution to the instrument. Press ENTER. Enter the lot number and expiration date of the alcohol reference solution used. Conduct three (3) analyses. The result of each analysis must be within the acceptable range.
	  • 0.20 g/210L TEST. Attach a simulator containing 0.20 g/210L alcohol reference solution to the instrument. Press ENTER. Enter the lot number and expiration date of the alcohol reference solution used. Conduct three (3) analyses. The result of each analysis must be within the acceptable range.
	  • 0.08 g/210L DRY GAS STANDARD TEST. Attach a cylinder containing 0.08 g/210L dry gas standard to the instrument. Press ENTER. Enter the lot number and expiration date of the dry gas standard used. Conduct three (3) analyses. The result of each analysis must be within the acceptable range.
	  • DIAGNOSTIC CHECK (Post-Inspection). Press ENTER. The result must be OK for each diagnostic check. If any diagnostic check is not OK, the instrument will abort the inspection process.
	  • REVIEW REMARKS. Enter Y/N.
	  • IN COMPLIANCE. Enter Y/N to state whether the instrument complies or does not comply with the requirements of Chapter 11D-
		Check simulator seal, temperature and connections or dry gas standard connection and pressure before repeating.
		
		An agency inspector must use at least two (2) properly operating simulators.
		
		Acceptable Range: 0.045 to 0.055 g/210L.
		
		Acceptable Range: 0.075 to 0.085 g/210L.
		
		Acceptable Range: 0.190 to 0.210 g/210L.
		
		Acceptable Range: 0.075 to 0.085 g/210L.

	8, FAC. If the instrument does not comply with Chapter 11D-8, FAC, remove the instrument from service and notify the Department Inspector.	
6	The results of the Agency Inspection must be recorded on FDLE/ATP Form 40 Agency Inspection Report – Intoxilyzer 8000.	
7	For regulatory and administrative purposes only, the results of the agency inspection must be made electronically available to the Department within five (5) days of completing the inspection.	Press the Escape button until READY MODE is displayed.

5.9 Describe the proper completion of FDLE/ATP Form 40 – Agency Inspection Report – Intoxilyzer 8000.

- FDLE/ATP Form 40 Agency Inspection Report – Intoxilyzer 8000 must be printed when the inspection is complete. The instrument must be connected to an external printer.
- After the inspection is complete and the report is printed, but before the upload is conducted, the agency inspector must carefully review the printed Agency Inspection Report for accuracy and completeness.
- The agency inspector will sign the Agency Inspection Report – Intoxilyzer 8000 FDLE/ATP Form 40, certifying that the agency inspection was conducted in accordance with Chapter 11D-8, Florida Administrative Code.
- The agency inspector is required by Chapter 11D-8, Florida Administrative Code to make the agency inspection results electronically available to the Department with five business days. This requirement is satisfied by using the Upload function in the agency inspector menu.
- Note: If the agency inspection is not uploaded at the time of inspection, the instrument will scroll the remaining days left to upload. If the agency inspection is not uploaded within the remaining time, the instrument will not allow breath tests to be conducted on it.

5.10 Describe how to UPLOAD the agency inspection and/or the breath test results.

- After the results have printed, the instrument will ask the Agency Inspector to UPLOAD NOW. Ensure the instrument is plugged into the telephone line and press ENTER. The results will automatically be uploaded. The breath test results will automatically be uploaded as well.
- If the agency inspection is not uploaded at the time of the inspection, the results may be uploaded using the Comms Transfer section in the agency inspector menu:
  - In the agency inspector menu, scroll to C and press ENTER. Ensure the instrument is connected to a phone line.
  - Enter or verify the telephone number to the database in Tallahassee and press ENTER.
  - All information will automatically be uploaded to the database in Tallahassee. The instrument will notify the agency inspector if the data was successfully uploaded.

5.11 State when conducting an agency inspection or a breath test using an Intoxilyzer 8000, an incorrect operational procedure or condition will cause the instrument to display and print a message associated with the incorrect operational procedure or condition. Define the messages and understand the action the agency inspector (or breath test operator) must take when each message is displayed and printed. Document all occurrences on the agency inspection report or the affidavit.

Message	Description	Action
INTERFERENT DETECT	An interfering substance was detected in the breath or control sample OR the calculated result obtained from the detection of light from each filter did not agree. The instrument will display INTERFERENT DETECT, abort the test, print INT* in the results section of the report, and print *INTERFERENT DETECT at the bottom of the results section of the report.	AGENCY INSPECTION: This is the appropriate response for the Interferent Test. If this response is obtained during other tests, restart the affected procedure of the agency inspection. BREATH TEST: Restart the breath test. If INTERFERENT DETECT is again obtained, the subject may need medical attention.
IMPROPER SAMPLE	The sample was introduced at the wrong time. The instrument will display IMPROPER SAMPLE, abort the test, print IPS* in the results section of the report, and print *IMPROPER SAMPLE at the bottom of the results section of the report.	AGENCY INSPECTION: Restart the affected procedure of the agency inspection and ensure the sample is delivered at that appropriate time. BREATH TEST: Restart the breath test and ensure that the

		subject provides the breath sample when the instrument displays PROVIDE SAMPLE NOW.
AMBIENT FAIL	The instrument was not able to clear the sample chamber during the air blank prior to a diagnostic check, breath sample or control sample. The instrument will display AMBIENT FAIL, abort the test, print AMB* in the results section of the report, and print *AMBIENT FAIL at the bottom of the results section of the report.	AGENCY INSPECTION: Clear the immediate area of possible contaminants and restart the affected procedure of the agency inspection. BREATH TEST: The operator must clear the immediate area of possible contaminants and restart the breath test. If AMBIENT FAIL is again obtained, contact the department inspector for further information.
PURGE FAIL	During the air blank after a breath or control sample, the instrument was not able to successfully clear the sample chamber of a breath or control test sample. The instrument will display PURGE FAIL, abort the test, print PUR* in the results section of the report, and print *PURGE FAIL at the bottom of the results section of the report.	AGENCY INSPECTION: Clear the immediate area of possible contaminants and restart the affected procedure of the agency inspection. BREATH TEST: The operator must clear the immediate area of possible contaminants and restart the breath test. If PURGE FAIL is again obtained, contact the department inspector for further information.
SUBJECT TEST REFUSED	The operator pressed the "R" key on the keyboard when the instrument displayed PROVIDE SAMPLE NOW. The instrument will display SUBJECT TEST REFUSED, abort the test, print REF* in the results section of the report, and print *SUBJECT TEST REFUSED at the bottom of the results section of the report.	BREATH TEST: A law enforcement officer or correctional officer must complete the applicable refusal affidavit.
NO SAMPLE PROVIDED	The subject did not provide a breath sample into the instrument within the three (3) minute time period allowed for each breath sampling process OR the subject did not provide a breath sample for at least one (1) second. The instrument will display NO SAMPLE PROVIDED, print NSP* in the results section of the report, and print *NO SAMPLE PROVIDED at the bottom of the results section of the report.	BREATH TEST: • If NO SAMPLE PROVIDED is obtained on the first breath sample, the instrument will continue to request two more samples. If the subsequent samples are valid, the breath test is complete. • If NO SAMPLE PROVIDED is obtained on the second breath sample, the instrument will continue to request a third breath sample. If the first and third breath samples are valid, the breath test is complete. • If NO SAMPLE PROVIDED is obtained on the first and second breath samples, the instrument will discontinue the breath test. • If the subject is not going to provide samples, the breath test is complete.
SLOPE NOT MET	The sample provided did not meet the slope requirements of a minimum acceptable breath sample and there was a negative slope (the alcohol concentration from the subject sample decreased). The instrument will display SLOPE NOT MET, abort the test, print SNM* in the results section of the report, and print *SLOPE NOT MET at the bottom of the results section of the report.	AGENCY INSPECTION: This is the appropriate response for the Mouth Alcohol Test. If this response is obtained during other tests, restart the affected portion of the agency inspection. BREATH TEST: Perform another twenty-minute observation period and restart the test.

RFI DETECT	The instrument detected radio frequency interference of a sufficient strength and frequency to interfere with the breath test or control test. The instrument will display RFI DETECT, abort the test, print RFI* in the results section of the report, and print *RFI DETECT at the bottom of the results section of the report.	AGENCY INSPECTION and BREATH TEST: Clear the room and immediate area of any radio frequency interference (such as radios or cell phones) and restart the affected procedure of the agency inspection or the breath test.
SEQUENCE ABORTED	The "Start Test" button was pressed during an operational function. The instrument will display SEQUENCE ABORTED, abort the test, print ABT* in the results section of the report, and print *SEQUENCE ABORTED at the bottom of the results section of the report.	AGENCY INSPECTION: Restart the entire agency inspection. Maintain the results of the first agency inspection and document occurrence. BREATH TEST: Restart the breath test (if this action was accidental).
RANGE EXCEEDED	The value of the breath sample provided exceeded the reporting range of the instrument (0.600 g/210L). The instrument will display RANGE EXCEEDED, abort the test, print RGE* in the results section of the report, and print RANGE EXCEEDED at the bottom of the results section of the report.	AGENCY INSPECTION: This response may be obtained during the Mouth Alcohol Test due to not waiting a few seconds before providing the sample after rinsing mouth with mouth alcohol solution. If obtained, restart the affected procedure of the agency inspection. BREATH TEST: Restart the breath test. If RANGE EXCEEDED is again obtained, the subject may need medical attention.
CONTROL OUTSIDE TOLERANCE	The alcohol reference solution or dry gas standard control test value(s) were out of range. On the breath test, the instrument will display CONTROL OUTSIDE TOLERANCE, abort the test, print an * by the control test result in the results section of the report, and print *CONTROL OUTSIDE TOLERANCE at the bottom of the results section of the report.	AGENCY INSPECTION: Check the simulator temperature, seal and connections, the proper concentration of alcohol reference solution is in the simulator or that the dry gas standard is connected, check dry gas standard cylinder connection O-rings and restart the affected procedure of the agency inspection. BREATH TEST: Ensure the dry gas standard is connected to the instrument. Additional Recommendations: Remove the subject from the testing area and allow the area to "air out" before beginning another test. Keep the subject away from the breath tube when samples are not being obtained. If CONTROL OUTSIDE TOLERANCE is again obtained, the operator should contact their department inspector for further instructions.
DIAGNOSTIC FAIL	One or more of the diagnostic tests failed. The instrument will display DIAGNOSTIC FAIL, abort the test, print FAIL* in the results section of the report and print *DIAGNOSTIC FAIL at the bottom of the results section of the report.	AGENCY INSPECTION: Restart the agency inspection. If DIAGNOSTIC FAIL for the same failure is again obtained, contact the department inspector. BREATH TEST: Restart the test. If DIAGNOSTIC FAIL for the same failure is again obtained, contact the department inspector.

VOLUME NOT MET	The breath sample provided did not meet the minimum breath sample requirement of 1.1Liter. The instrument will display VOLUME NOT MET, print VNM* in the results section of the report, and print *VOLUME NOT MET (0.XXX Breath Sample Not Reliable for Quantitative Breath Alcohol Level) at the bottom of the results section of the report.	BREATH TEST: • If VOLUME NOT MET is obtained on the first breath sample, the instrument will continue to request two more samples. If the subsequent samples are valid, the breath test is complete. • If VOLUME NOT MET is obtained on the second breath sample, the instrument will continue to request a third breath sample. If the first and third breath samples are valid, the breath test is complete. • If VOLUME NOT MET is obtained on the first and second breath samples, the instrument will discontinue the breath test.
NO .020 AGREEMENT	There was not 0.020 g/210L agreement between the three samples of breath obtained. The instrument will display NO .020 AGREEMENT, print a * by the breath sample results, and print *NO .020 AGREEMENT at the bottom of the results section of the report.	BREATH TEST: Restart the breath test.
SLOPE NOT LEVEL	The sample provided did not meet the slope requirements of a minimum acceptable breath sample and the slope of the breath sample being provided is still rising and did not level off. The instrument will display SLOPE NOT LEVEL, print SNL* in the results section of the report, and print *SLOPE NOT LEVEL (0.XXX Breath Sample Not Reliable for Quantitative Breath Alcohol Level) at the bottom of the results section of the report.	BREATH TEST: • If SLOPE NOT LEVEL is obtained on the first breath sample, the instrument will continue to request two more samples. If the subsequent samples are valid, the breath test is complete. • If SLOPE NOT LEVEL is obtained on the second breath sample, the instrument will continue to request a third breath sample. If the first and third breath samples are valid, the breath test is complete. • If SLOPE NOT LEVEL is obtained on the first and second breath samples, the instrument will discontinue the breath test. The operator must restart the breath test.
TANK BELOW MIN	The gas pressure of the dry gas standard cylinder is under 25 psi. The instrument cannot be used until the dry gas standard cylinder is changed.	The operator or Agency Inspector will need to change the dry gas standard cylinder and record the new lot number and expiration date. An agency inspection or breath test can then be conducted.
DISABLED MODE	The agency inspector did not upload the agency inspection OR there are 150 breath tests that need to be uploaded OR an agency inspection needs to be completed.	The agency inspector or department inspector must upload the stored agency inspection and/or breath tests OR an agency inspection needs to be conducted before the instrument may be used.

Agency Inspector Course
Lesson Plan

Lesson Five
Conducting the Agency Inspection

Review Questions

1. What are the acceptable ranges for the following alcohol reference solution or dry gas standard: 0.05 g/210L, 0.08 g/210L, and 0.20 g/210L?

2. What is acetone stock solution?

3. What is mouth alcohol solution?

4. What procedures must be followed when conducting an agency inspection of an Intoxilyzer 8000?

5. True or False. Whenever an instrument is taken out of evidentiary use and prior to returning an instrument to evidentiary use, the agency inspector must perform an agency inspection.

6. True or False. A department inspection must be conducted when an instrument is returned from an authorized repair facility.

Agency Inspector Course
Lesson Plan

Lesson Five
Conducting the Agency Inspection

Review Answers

1. What are the acceptable ranges for the following alcohol reference solution or dry gas standard: 0.05 g/210L, 0.08 g/210L, and 0.20 g/210L?

   0.05 g/210L – 0.045 to 0.055 g210L
   0.08 g/210L – 0.075 to 0.085 g/210L
   0.20 g/210L – 0.190 to 0.210 g/210L

2. What is acetone stock solution?

   A mixture of acetone and distilled or deionized water provided by the Department. It is used to conduct the Interferent Test on the Intoxilyzer 8000.

3. What is mouth alcohol solution?

   A mixture of alcohol and distilled or deionized water provided by the Department. It is used to conduct the Mouth Alcohol Test.

4. What procedures must be followed when conducting an agency inspection of an Intoxilyzer 8000?

   FDLE/ATP Form 39 Agency Inspection Procedures – Intoxilyzer 8000

5. True or False. Whenever an instrument is taken out of evidentiary use and prior to returning an instrument to evidentiary use, the agency inspector must perform an agency inspection.

   True

6. True or False. A department inspection must be conducted when an instrument is returned from an authorized repair facility.

   True

Agency Inspector Course
Lesson Plan

Requirements for Laboratory Practical

Laboratory Practical

Requirements for the Intoxilyzer 8000:

- The student must complete at least one (1) demonstration with the instructor.
- The student must complete at least one (1) independent agency inspections on an Intoxilyzer 8000 (these independent agency inspections are in addition to the proficiency agency inspection)
- The student must properly complete the required paperwork associated with the independent agency inspection. The paperwork includes the following: FDLE/ATP Form 40 – Agency Inspection Report - Intoxilyzer 8000

Agency Inspector Course
Lesson Plan

Lesson Six
Courtroom Testimony

Introduction

During this lesson the student will learn how to testify regarding the agency inspection that was conducted and, through answering questions sometimes asked in court, will review all information learned in this course.

Objectives

6.1 When testifying in court the agency inspector should be well prepared and ready to answer questions regarding the breath test.

Before going to Court:

- Review course material in conducting the agency inspection (for example, instrument theory, instrument operation and the rules of conducting an agency inspection).
- Understand why you conduct agency inspections of evidentiary breath test instruments (for example, to ensure the accuracy and reliability and proper operation of the evidentiary breath test instrument).
- Review your agency inspections to re-familiarize yourself with the occurrences of the agency inspections.

Testifying in Court:

- Dress professionally – uniform or business attire.
- Speak loudly and clearly.
- Emphasize you training, education and experience.
- Speak in simple language when possible. Breath testing contains complex scientific language but try to keep it simple and use analogies when possible.
- Do not be afraid to say "I don't know" when you do not know the answer.
- Do not argue with either the prosecutor or the defense counsel.
- Listen carefully to the question and answer only the question asked.
- Take your time when answering a question. If necessary, think about your answer before giving it.
- If possible, use visual aids or demonstrations when testifying.

6.2 The agency inspector should be familiar with answering questions asked in court regarding the agency inspection.

- The class will be broken down into small groups. Using an agency inspection from the practical conducted earlier, students will take turns asking and answering the following questions below:

  Getting "qualified" as an Agency Inspector:

  - Please state your name.
  - Where are you employed?
  - How long have you been employed with that agency?
  - What are your duties and responsibilities?
  - Do you have any education or experience in conducting agency inspections?
  - Did you learn how to conduct agency inspections in accordance with Chapter 11D-8, FAC?
  - Do you hold a permit to conduct agency inspections?
  - When did you obtain it?
  - How many agency inspections have you conducted?
  - What are your duties as an agency inspector?

  The Agency Inspection:

  - Are you familiar with Intoxilyzer (5000/8000) Serial Number _____?
  - Where is this instrument kept?
  - Is this instrument kept in a clean, dry and secure area?
  - Who has access to this instrument?

- Is this instrument approved by FDLE?
- Does this instrument use infrared light absorption?
- What is infrared light absorption?
- Is this instrument registered by FDLE to conduct evidentiary breath testing?

Admission of the Agency Inspection:

- Do you recognize this document?
- How do you recognize it?
- What is this document?
- Did you complete the document at or near the time of the agency inspection?
- What is an agency inspection?
- Why do you conduct agency inspections?
- What tests are performed when conducting an agency inspection?

(Inspection must be admitted into evidence)

- What were the results of the agency inspection?
- Was this instrument operating correctly and in proper calibration as indicated by your agency inspection?

6.3 The student must be able to answer questions regarding an agency inspection and what occurred during the inspection process.

- The students will be brought back into one group again. The following scenarios will be discussed as a class:

Scenario One: An Agency Inspection with an Out of Range 0.08 g/210L Alcohol Reference Solution Result.	
QUESTION	SAMPLE ANSWER
When conducting this agency inspection you received an out of range result for the 0.08 g/210L alcohol reference solution analysis. Results: 0.074, 0.081, 0.081 The instrument required you to repeat these tests. You repeated the analysis of the 0.08 g/210L analysis and all results were within acceptable range. QUESTION 1: Why did you obtain an out of range reading on your first 0.08 g/210L analyses? QUESTION 2: What did you do to address the out of range reading? QUESTION 3: So you just keep testing until you get the right answer? QUESTION 4: How do you know that the instrument is operating correctly?	ANSWER 1: The first reading (0.074) was out of range because the simulator had not warmed up to proper temperature to allow for full equilibration of the solution into the headspace of the simulator. ANSWER 2: I allowed the simulator to heat with the 0.08 g/210L solution in it for an additional 10 minutes and repeated the tests. ANSWER 3: No. I address the problem and repeat the tests. If out of range results were obtained on the repeat analysis, I would mark this inspection as DOES NOT COMPLY and remove the instrument from evidentiary use. ANSWER 4: On the repeat analysis, after addressing the problem, which was not the instrument, the results were within acceptable range and the instrument is operating correctly.

Scenario Two: An Agency Inspection with Out of Range 0.08 g/210L Dry Gas Standard Results.	
QUESTION	SAMPLE ANSWER
When conducting this agency inspection you received out of range results for the 0.08 g/210L dry gas standard analysis. Results: 0.000, 0.000, 0.000 The instrument required you to repeat these tests. You repeated the analysis of the 0.08 g/210L analysis and all results were within acceptable range. QUESTION 1: Why did you obtain an out of range reading on your 0.08 g/210L dry gas standard analyses? QUESTION 2: What did you do to address the out of range reading? QUESTION 3: So you just keep testing until you get the right answer? QUESTION 4: How do you know that the instrument is operating correctly?	ANSWER 1: The dry gas standard cylinder was not connected to the instrument. ANSWER 2: I attached the cylinder to the instrument and repeated the tests. ANSWER 3: No. I address the problem and repeat the tests. If out of range results were obtained on the repeat analysis, I would mark this inspection as DOES NOT COMPLY and remove the instrument from evidentiary use. ANSWER 4: On the repeat analysis, after addressing the problem, which was not the instrument, the results were within acceptable range and the instrument is operating correctly.

Scenario Three: An Agency Inspection with INTERFERENT DETECT not resulting during the Alcohol Free with Acetone Test.	
QUESTION	SAMPLE ANSWER
When conducting this agency inspection you did not obtain INTERFERENT DETECT on your Alcohol Free with Acetone Test analysis. Results: 0.000, 0.000, 0.000 The instrument required you to repeat these tests. You repeated the Alcohol Free with Acetone Test and all results were within acceptable range. QUESTION 1: Why was the acetone not detected? QUESTION 2: What did you do to address this? QUESTION 3: So the instrument really isn't operating correctly? QUESTION 4: How do you know that the instrument is operating correctly?	ANSWER 1: The bottle of acetone stock solution that was used was almost depleted. It may have not contained the correct amount of acetone for the instrument to detect. ANSWER 2: I obtained a fresh bottle of acetone stock solution and prepared a new simulator for the Alcohol Free with Acetone tests. I allowed the simulator to warm up properly and repeated the test. ANSWER 3: No. I address the problem and repeat the tests. If incorrect results were obtained on the repeat analysis, I would mark this inspection as DOES NOT COMPLY and remove the instrument from evidentiary use. ANSWER 4: On the repeat analysis, after addressing the problem, which was not the instrument, the results were within acceptable range and the instrument was operating correctly.

Agency Inspector Course
Lesson Plan

Written Examination and Proficiency

Proficiency

- As outlined in Chapter 11D-8, Florida Administrative Code, each student must successfully demonstrate proficiency in conducting an agency inspection.
- These requirements include:
  - The proper inspection of an approved breath test instrument in accordance with FDLE/ATP Form 39 – Agency Inspection Procedures – Intoxilyzer 8000
  - Proper completion of all required forms (FDLE/ATP Form 40 – Agency Inspection Report – Intoxilyzer 8000)
  - Properly performing a breath test in accordance with FDLE/ATP Form 37 – Operational Procedures – Intoxilyzer 8000
  - Proper completion of FDLE/ATP Form 38 – Breath Alcohol Test Affidavit

Written Examination

- Each student must take a written examination.
- Successful completion of the written examination requires a passing grade of 80% or better.