A. Purpose:

To describe the equipment available to the Firearms Unit for test firing firearms and recovering ammunition components. The water recovery tank room and the indoor range are designated safe laboratory areas for loading and unloading firearms.

B. Responsibility:

Forensic Science Examiners and other laboratory personnel assigned to the Firearms Unit.

C. Safety:

1. Eye and ear protection shall be worn. Additional PPE may be worn at the analyst's discretion.
2. Test firing must be conducted in a designated safe laboratory area.
3. Firearms must only be loaded in the designated safe laboratory areas.
4. No other person should be present in the water recovery tank room during the test firing process unless there is a condition that exists with the firearm, in which the aid of another individual is necessary. This person must take the same safety precautions by wearing eye and ear protection.
5. Anyone present on the indoor range during test firing will also wear eye and ear protection. This excludes the work area immediately outside the indoor range.

D. Procedure:

1. Water Recovery Tank

   The water recovery tank may be used to collect fired bullets and/or cartridge cases during operability testing.

   a. Check the water level.
   b. Check the bullet recovery cup to ensure it is free of any debris, then lower it to the bottom of the tank and seat it properly.
   c. Turn on the warning light for the hallway and the exhaust ventilation.
   d. With the muzzle facing vertically downward into the recovery tank, load the firearm and close the action.
   e. Test fire the firearm, then render it safe and clear of ammunition before removing it from the recovery tank.
   f. Retrieve the test fires from the recovery cup. Ensure that all of the test fires have been collected.

i. Ammunition components that have missed the recovery cup may be retrieved by operating the valves at the bottom of the tank.

2. Snail Trap

The snail trap is located in the water recovery tank room. It may be used to test fire weapons for operability and to collect fired cartridge cases. Bullets recovered from this device are not considered suitable for comparison purposes.

a. Turn on the warning light for the hallway and the exhaust ventilation.

b. With the muzzle of the firearm inserted into the port of the snail trap, load the firearm and close the action.

c. Test fire the firearm, then render it safe and clear of ammunition before removing the muzzle from the snail trap port.

d. Collect the fired cartridge cases.

3. Indoor Range

The indoor range may be used to test fire weapons for operability, for distance determination testing, and to collect fired cartridge cases from firearms that cannot be fired into the water recovery tank or the snail trap. Bullets recovered from this device are not considered suitable for comparison purposes.

a. Turn on the warning light for the hallway and the exhaust ventilation.

b. Turn on the pump.

c. With the muzzle of the firearm pointed downrange, load the firearm and close the action.

d. Test fire the firearm, then render it safe and clear of ammunition.

e. Collect the fired cartridge cases.

f. Once all testing has been completed, clean up any test firing debris, such as buffer, wads, cardboard pieces, etc.

4. Cotton Box

The cotton box is an alternate method of collecting fired bullets from weapons that cannot be fired into the water recovery tank.

a. Position the cotton box in the desired position on the indoor range with the hand crank end downrange. Lock the casters.

b. Mist the first sections of the cotton with water to eliminate the chance of the cotton catching fire during the test firing process.

c. If desired, add paper witness panels at intervals within the cotton to assist in bullet recovery.

d. Close and lock the two lids.

e. Turn the hand crank to compress the cotton.

f. Adjust the angle of the cotton box to the desired height.

g. With the muzzle of the firearm pointing through or resting on the v-shaped block in the shooting port, load the firearm and close the action.

h. Test fire the firearm, then render it safe and clear of ammunition before removing the muzzle from the shooting port.

   i. Slightly displace each round so the bullet has a new path for each test fire.

i. Turn the hand crank to release the compressed cotton and open the locked lids.

j. The bullet(s) will be cocooned in a wad of cotton. Use the witness panels to find the location.

k. Collect the fired cartridge cases.

5. Remote Firing Device

   The remote firing device may be used to test fire weapons that are deemed unsafe for handling. It may be used by itself on the indoor range, or in conjunction with the cotton box.

   a. With the remote firing device pointed downrange, position the firearm with the barrel in the v-shaped front barrel rest and place the grips/butt between the gripper pads on the rear slider. The front barrel rest and the slider are adjustable to accommodate any size firearm.

   b. Flip the lever that actuates the pneumatic cylinder on the rear slider, allowing the gripper pads to close and firmly hold the firearm.

   c. Flip the lever to lock the restraint rod in place over the front barrel rest.

   d. Load the firearm with one (1) cartridge and close the action.

   e. Insert the firing rod through the trigger guard. The device is now ready to fire.

   f. Press the control panel activation button. A warning light and buzzer will come on.

   g. Take the remote firing box and step away from the device.

   h. The firearm may be fired by pressing the firing button from a safe distance.

      i. The cartridge should be removed from the chamber of the firearm if it has not been discharged.

   i. Recheck the positioning of the firearm in the device and ensure the locking mechanisms are secure before attempting to fire the firearm again.

   j. To release the firearm, remove the firing rod from the trigger guard and flip the levers on the air valves to release the air from the cylinders. The firearm may now be removed.

   k. After completion of testing, turn off all electrical power to the remote firing device and secure the device.

E. Equipment:

1. Personal protective equipment (PPE)
2. Vertical water recovery tank
3. Snail trap
4. Indoor range
5. Cotton box
6. Remote firing device

F. References:

1. GL-2 Safety Manual
2. FA SOP-02 General Firearms Safety
3. CyberNational, Inc. Ballistic Box operating guide
4. CyberNational, Inc. Portable Remote Firing Cart operating guide