Chapter 2

Individual Sampling SOPs

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHODS 504.1 & 505 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Two pre-cleaned 40-mL glass septum vials with Teflon septa per sample.
   Preservative: Sodium thiosulfate (in all samples); ice.
   Other: Labels, marker, DPD chlorine field test kit (if water is chlorinated), safety glasses, phthalate-free gloves and **field reagent blanks.** (For Method 504.1 the laboratory must provide a pair of field reagent blanks to accompany samplers on each compliance monitoring sampling event. Do not open them.)

3. **Safety Concerns:** "Empty" sample vials may contain sodium thiosulfate preservative. Open them slowly and carefully.

4. **Pre-collection Notes:**
   a. Dechlorination: If sampler is not familiar with the amount of sodium thiosulfate required to neutralize the samples at each site and the appropriate amount was not added by the supplier of the vials, the following procedure should be followed.
      (1) Fill a spare vial (that does not contain thiosulfate) with sample. Alternatively, add 40 mL of sample to a graduated cylinder.
      (2) Add 3 mg. of sodium thiosulfate to the sample and mix until dissolved.
      (3) Check this vial with the field test kit to see if all chlorine has been neutralized. If not, add additional 3 mg. portions of thiosulfate, followed by stirring and retesting, until chlorine has been neutralized. Add an equivalent amount of thiosulfate to each vial of the actual sample (unless it has been added by the vial supplier).

5. **Sample Collection Procedure** – fill two vials as follows:
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object.
   d. Add 3 mg. of sodium thiosulfate to empty vial if it was not added by bottle supplier.

e. Fill vial carefully until water is nearly to the rim. Then **gently** add sample to the inverted cap, and **gently** pour sample from the cap to the vial to form water above the rim as shown in the diagram on the back of this sheet. (This will prevent the formation of an air pocket in the vial.) Gently tap the vial to dislodge any air bubbles.
f. Carefully hook cap over the top of the vial, trying to match the threads as shown in the diagram on the back of these instructions. The Teflon side of the septum must be down (facing the sample).
g. Screw cap on securely. Check for air bubbles by inverting the vial and gently tapping the cap. **If bubbles are present**, carefully remove the cap and repeat step 5e. If any sample in the vial is spilled, return to step 5c and begin again with a fresh vial. (Note: Samples with bubbles cannot be analyzed.)
h. Shake sample for one minute to dissolve sodium thiosulfate.
i. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
j. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.
   c. The maximum holding time for heptachlor is 7 days; it is 14 days for all other analytes.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHODS 506, 507 & 508 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned one-liter or half-gallon glass bottle with Teflon-lined cap.
   Preservatives: Sodium thiosulfate (if water is chlorinated); ice.
   Other: Labels, marker, DPD chlorine field test kit (if water is chlorinated), safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Bottles may contain sodium thiosulfate.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. **If you are certain that no chlorine is present, proceed to step 4g.**
   e. If sodium thiosulfate has been added to bottle by bottle supplier, proceed to step 4g.
   f. Add 80 mg. per liter sodium thiosulfate to bottle.
   g. Fill bottle to shoulder.
   h. Screw cap on securely and shake sample do dissolve sodium thiosulfate.
   i. Check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, repeat steps 4f, 4h and 4i.
   j. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
   k. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.
   c. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.
   d. The maximum holding time if 14 days for Methods 506 and 507. It is 7 days for Method 508.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHODS 508.1 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned one-liter or half-gallon glass bottle with Teflon-lined cap.
   Preservatives: Sodium sulfite (if water is chlorinated); 6 Normal hydrochloric acid; ice.
   Other: Labels, marker, pH test strips, DPD chlorine field test kit (if water is chlorinated), safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Caution! Hydrochloric acid is a strong acid and will cause burns. Caution! "Empty" sample bottles may contain acid or sodium sulfite. Open them slowly and carefully.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. Fill bottle to shoulder.
   e. **If you are certain that no chlorine is present, proceed to step 4i.**
   f. If sodium sulfite has been added to bottle by bottle supplier, proceed to step 4h.
   g. Add 50 mg. sodium sulfite to sample, screw cap on securely and shake bottle to dissolve sodium sulfite. Carefully remove cap.
   h. Check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, repeat steps 4g and 4h. Carefully remove cap.
   i. Unless acid was added by bottle supplier, add up to 4 mL 6N hydrochloric acid to sample to adjust sample to pH ≤ 2. Screw cap on securely and swirl sample to mix.
   j. Remove cap. Pour a few drops of sample from bottle to cap, and then pour a drop of sample from the cap on a pH test strip. If a red color appears, the pH is ≤ 2. If a red color does not appear, repeat steps 4i and 4j. Do not dip pH paper into sample. Do not let pH paper touch the inside of the sample container or the cap.
   k. Screw cap on securely.
   l. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
   m. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.
   c. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.
   d. The maximum holding time is 14 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHOD 515.2 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned 250 mL amber glass bottles with Teflon-lined cap.
   Preservatives: Sodium thiosulfate or sodium sulfite (if water is chlorinated); 6 Normal hydrochloric acid; ice.
   Other: Labels, marker, pH test strips, DPD chlorine field test kit (if water is chlorinated), safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Caution! Hydrochloric acid is a strong acid and will cause burns. Caution! "Empty" sample bottles may contain acid, sodium thiosulfate or sodium sulfite. Open them slowly and carefully.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. Fill bottle to shoulder.
   e. **If you are certain that no chlorine is present, proceed to step 4i.**
   f. If sodium thiosulfate or sodium sulfite has been added to bottle by bottle supplier, screw cap on securely, shake sample do dissolve this preservative, remove cap, and proceed to step 4h.
   g. Add 20 mg. sodium thiosulfate (or 13 mg sodium sulfite) to sample, screw cap on securely and shake bottle to dissolve this preservative. Carefully remove cap.
   h. Check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, repeat steps 4g and 4h. Remove cap.
   i. Unless acid was added by bottle supplier, add up to 1 mL 6N hydrochloric acid to sample to adjust sample to pH ≤ 2. Screw cap on securely and swirl sample to mix.
   j. Remove cap. Pour a few drops of sample from bottle to cap, and then pour a drop of sample from the cap on a pH test strip. If a red color appears, the pH is ≤ 2. If a red color does not appear, repeat steps 4i and 4j. Do not dip pH paper into sample. Do not let pH paper touch the inside of the sample container or the cap.
   k. Screw cap on securely.
   l. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**

m. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.
   c. Deliver samples to lab the same day, if possible, <u>at a time acceptable to the lab</u>.
   d. The maximum holding time is 14 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHOD 515.3 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned 50 mL amber glass bottles with Teflon-lined screw cap. Samples should be taken in duplicate.
   Preservatives: Sodium thiosulfate (if water is chlorinated); ice. Do not use synthetic (blue) ice.
   Other: Labels, marker, DPD chlorine field test kit (if water is chlorinated), safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Caution! "Empty" sample bottles may contain sodium thiosulfate. Open them slowly and carefully.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. **If you are certain that no chlorine is present, proceed to step 4f.**
   e. If sodium thiosulfate has not been added to bottle by bottle supplier, add 4 mg now to empty bottle.
   f. Fill bottle to shoulder. Screw cap on securely.
   g. If no sodium thiosulfate was added because you are certain no chlorine is present, proceed to step 4k.
   h. If sodium thiosulfate has been added to bottle by sampler or bottle supplier, shake sample to dissolve this preservative, remove cap.
   i. Check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, add an additional 4 mg sodium thiosulfate, cap sample, shake it and retest it.
   j. After you have verified that no chlorine is present, proceed to step 4k.
   k. Screw cap on securely.
   l. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
   m. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.
   c. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.
   d. The maximum holding time is 14 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

Method 524.2 (Volatile Organics) – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Two pre-cleaned 40-mL glass septum vials with Teflon septa per sample.
   Preservative: 1:1 Hydrochloric acid, ascorbic acid (if water is chlorinated), ice.
   Other: Labels, marker, pH test strip paper, DPD chlorine field test kit (if water is chlorinated), safety glasses, phthalate-free gloves and **field reagent blanks**. (The laboratory must provide a pair of field reagent blanks to accompany samplers on each compliance monitoring sampling event. Do not open them.)

3. **Safety Concerns:** Caution! Hydrochloric acid is a strong acid and will cause burns. Caution! "Empty" sample vials may contain acid. Open them slowly and carefully.

4. **Pre-collection Notes:**
   a. Dechlorination: If sampler is not familiar with the amount of ascorbic acid required to neutralize the samples at each site, the following procedure should be followed.
      (1) Fill a spare vial (that does not contain acid or ascorbic acid preservative) with sample. Alternatively, add 40 mL of sample to a graduated cylinder.
      (2) Add 25 mg. of ascorbic acid to the sample and mix until dissolved.
      (3) Check this vial with the field test kit to see if all chlorine has been neutralized. If not, add additional 25 mg. portions of ascorbic acid, followed by stirring and retesting, until chlorine has been neutralized. Add an equivalent amount of ascorbic acid to each vial of the actual sample.
   b. Acidification: If sampler is not familiar with the amount of 1:1 hydrochloric acid required to reduce the pH of the sample to less than pH 2, the following procedure should be followed.
      (1) Fill a spare vial as in step 4a(1) above.
      (2) Add 2 drops of acid to the sample with careful mixing.
      (3) Place a drop of sample on a pH test strip. If a red color appears, then 2 drops is the amount to add to the actual sample. If a red color does not appear, additional drops of acid should be added until a red color is obtained. An equivalent amount of acid should be added to the actual sample.

5. **Sample Collection Procedure** – Fill at least two vials as follows:
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater

than 1/8 inch in diameter.

c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object.
d. **If you are certain that no chlorine is present, proceed to step 5h.**
e. If ascorbic acid has been added to vial by bottle supplier, proceed to step 5g (unless the test in step 4a shows additional ascorbic acid is necessary.
f. Add 25 mg. of ascorbic acid (or the amount determined in step 4a) to empty vial.
g. Fill vial carefully until water is nearly to the rim. Then **gently** add sample to the inverted cap, and **gently** pour sample from the cap to the vial to form water above the rim as shown in the diagram on the back of this sheet. (This will prevent the formation of an air pocket in the vial.) Gently tap the vial to dislodge any air bubbles.
h. If acid was added to vial by bottle supplier, proceed to step 5j.
i. Carefully add 2 drops of 1:1 hydrochloric acid to center of the water surface (i.e., to the meniscus). The acid will sink to bottom of vial, displacing 2 drops of sample.
j. Carefully hook cap over the top of the vial, trying to match the threads as shown in the diagram on the back of these instructions. The Teflon side of the septum must be down (facing the sample).
k. Screw cap on securely. Check for air bubbles by inverting the vial and gently tapping the cap. **If bubbles are present**, carefully remove the cap and repeat step 5e. If any sample in the vial is spilled, return to step 5c and begin again with a fresh vial. (Note: Samples with bubbles cannot be analyzed.)
l. Shake sample for one minute.
m. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
n. Complete chain-of-custody form if requested by lab or water supply program.

6. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.
   c. The maximum holding time is 14 days if samples are preserved and kept at 4 deg. C.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHOD 525.2 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned one-liter amber glass bottles with Teflon-lined cap.
   Preservatives: Sodium sulfite (if water is chlorinated); 6 Normal hydrochloric acid; ice.
   Other: Labels, marker, pH test strips, DPD chlorine field test kit (if water is chlorinated), safety glasses, phthalate-free gloves and **field reagent blanks**. (The laboratory should provide a field reagent blank to accompany samplers on each compliance monitoring event. Do not open it.)

3. **Safety Concerns:** Caution! Hydrochloric acid is a strong acid and will cause burns. Caution! "Empty" sample bottles may contain acid or sodium sulfite. Open them slowly and carefully.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. Fill bottle to shoulder.
   e. **If you are certain that no chlorine is present, proceed to step 4i.**
   f. If sodium sulfite has been added to bottle by bottle supplier, screw cap on securely, shake sample do dissolve this preservative, remove cap, and proceed to step 4h.
   g. Add 50 mg sodium sulfite to sample, screw cap on securely and shake bottle to dissolve this preservative. Carefully remove cap.
   h. Check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, repeat steps 4g and 4h.
   i. Unless acid was added by bottle supplier, add up to 1 mL 6N hydrochloric acid to sample to adjust sample to pH ≤ 2. Screw cap on securely and swirl sample to mix.
   j. Remove cap. Pour a few drops of sample from bottle to cap, and then pour a drop of sample from the cap on a pH test strip. If a red color appears, the pH is ≤ 2. If a red color does not appear, repeat steps 4i and 4j. Do not dip pH paper into sample. Do not let pH paper touch the inside of the sample container or the cap.
   k. Screw cap on securely.

l. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
m. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.
   c. Deliver samples to lab the same day, if possible, <u>at a time acceptable to the lab</u>.
   d. The maximum holding time is 14 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHOD 531.1 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned 60 mL glass bottles with Teflon-lined septum caps.
   Preservatives: Sodium thiosulfate (if water is chlorinated); monochloroacetic acid buffer solution (pH 3); ice.
   Other: Labels, marker, DPD chlorine field test kit (if water is chlorinated), safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Caution! Monochloroacetic acid is toxic and may also irritate the skin. Caution! "Empty" sample bottles may contain the acid or sodium thiosulfate. Open them slowly and carefully.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.

   d. **Procedure when chlorine is NOT present and preservative was NOT added to the bottles:**
      (1) Add 1.8 mL monochloroacetic acid buffer solution to empty bottle.
      (2) Fill bottle to shoulder, screw cap on securely and swirl to mix. Proceed to step 4h.

   e. **Procedure when chlorine is NOT present and preservative was added to the bottles:**
      (1) Fill bottle to shoulder, screw cap on securely and swirl to mix. Proceed to step 4h.

   f. **Procedure when chlorine is present and preservative was NOT added to the bottles:**
      (1) Add 5 mg sodium thiosulfate to sample bottle and fill bottle to shoulder, leaving at least 2 mL space.

(2) Screw cap on securely and swirl bottle to dissolve this preservative. Carefully remove cap.
(3) Check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, repeat steps 4f(1), 4f(2) and 4f(3).
(4) Add 1.8 mL monochloroacetic acid buffer solution to sample, screw cap on securely and swirl bottle to mix. Proceed to step 4h.

g. **Procedure when chlorine is present and preservative was added to the bottles:**
(1) When sodium thiosulfate has been added to bottle by bottle supplier, fill bottle to shoulder, leaving at least 2 mL space.
(2) Screw cap on securely and swirl bottle to dissolve this preservative. Carefully remove cap.
(3) Check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, follow step 4f(1) and repeat steps 4g(2) and 4g(3).
(4) Add 1.8 mL monochloroacetic acid buffer solution to sample, screw cap on securely and swirl bottle to mix.

h. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
i. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
b. Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.
c. Deliver samples to lab the same day, if possible, <u>at a time acceptable to the lab</u>.
d. The maximum holding time is 28 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHODS 547 and 548.1 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned glass bottles with Teflon-lined caps. Sizes should be at least 60 mL for Method 547, and at least 100 mL for Method 548.1. Lab may require extra volumes for required lab QC procedures.
   Preservatives: Sodium thiosulfate (if water is chlorinated); ice.
   Other: Labels, marker, DPD chlorine field test kit (if water is chlorinated), safety glasses and phthalate-free gloves.

3. **Safety Concerns:** None.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. Fill bottle to shoulder.
   e. **If you are certain that no chlorine is present, proceed to step 4i.**
   f. If sodium thiosulfate has been added to bottle by bottle supplier, screw cap on securely, shake sample do dissolve this preservative, remove cap, and proceed to step 4h.
   g. Add 80 mg sodium thiosulfate per liter of sample, screw cap on securely and shake bottle to dissolve this preservative.
   h. Remove cap and check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, repeat steps 4g and 4h.
   i. Screw on cap securely (if this has not already been done).
   j. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
   k. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.

b. Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.
c. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.
d. The maximum holding time is 14 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHOD 549.2 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned bottles at least 250 mL in size. Bottles must be either amber high density PVC or silanized amber glass.
   Preservatives: Sodium thiosulfate (if water is chlorinated); ice.
   Other: Labels, marker, DPD chlorine field test kit (if water is chlorinated), safety glasses and phthalate-free gloves.

3. **Safety Concerns:** None.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. Fill bottle to shoulder.
   e. **If you are certain that no chlorine is present, proceed to step 4i.**
   f. If sodium thiosulfate has been added to bottle by bottle supplier, screw cap on securely, shake sample do dissolve this preservative, remove cap, and proceed to step 4h.
   g. Add 80 mg sodium thiosulfate per liter of sample, screw cap on securely and shake bottle to dissolve this preservative.
   h. Remove cap and check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, repeat steps 4g and 4h.
   i. Screw on cap securely (if this has not already been done).
   j. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
   k. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.
   c. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.
   d. The maximum holding time is 7 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHODS 550 and 550.1 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned one-liter amber glass bottles with Teflon-lined cap.
   Preservatives: Sodium thiosulfate (if water is chlorinated); 6 Normal hydrochloric acid; ice.
   Other: Labels, marker, DPD chlorine field test kit (if water is chlorinated), safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Caution! Hydrochloric acid is a strong acid and will cause burns. Caution! "Empty" sample bottles may contain acid or sodium thiosulfate. Open them slowly and carefully.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. Fill bottle to shoulder.
   e. **If you are certain that no chlorine is present, proceed to step 4i.**
   f. If sodium thiosulfate has been added to bottle by bottle supplier, screw cap on securely, shake sample do dissolve this preservative. Carefully remove cap. Proceed to step 4h.
   g. Add 80 mg sodium thiosulfate to sample, screw cap on securely and shake bottle to dissolve this preservative. Carefully remove cap.
   h. Check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, repeat steps 4g and 4h.
   i. Unless acid was added by bottle supplier, add up to 1 mL 6N hydrochloric acid to sample to adjust sample to pH ≤ 2. Screw cap on securely and swirl sample to mix.
   j. Remove cap. Pour a few drops of sample from bottle to cap, and then pour a drop of sample from the cap on a pH test strip. If a red color appears, the pH is ≤ 2. If a red color does not appear, repeat steps 4i and 4j. Do not dip pH paper into sample. Do not let pH paper touch the inside of the sample container or the cap.
   k. Screw cap on securely.

l. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
m. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.
   c. Deliver samples to lab the same day, if possible, <u>at a time acceptable to the lab</u>.
   d. The maximum holding time is 7 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHOD 551.1 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned 60 mL glass vials with Tefon-lined septum caps. All samples are collected in duplicate. (If sample is to be tested for chloral hydrate, a second pair vials per sample – with a different preservative -- will be collected.) Extra vials should be taken, too.
   Preservatives: Special buffer/dechlorinating reagents prepared and added to the empty vials by the bottle supplier; ice. Do not use synthetic (blue) ice. (See Sec. 8.1 of EPA Method 551.1 for reagent preparation.)
   Other: Labels, marker, safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Caution! "Empty" sample bottles will contain special preservatives. Open them slowly and carefully.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. Take all samples in duplicate **according to instructions from the laboratory**.
   e. Fill vial carefully until water is actually above the vial rim. (This will prevent the formation of an air pocket in the vial.) Gently tap the vial to dislodge any air bubbles.
   f. Carefully hook cap over the top of the vial, trying to match the threads as shown in the diagram on the back of these instructions. The Teflon side of the septum must be down (facing the sample).
   g. Screw cap on securely. Check for air bubbles by inverting the vial and gently tapping the cap. **If bubbles are present**, repeat sampling procedure with a fresh vial.
      Caution: Each individual vial in a pair of vials comprising one sample may have a different preservative. If repeat sampling is necessary, the replacement vial must have the same preservative as the vial being replaced.
   h. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**

i. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.
   c. The maximum holding time is 14 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHODS 552.1 & 552.2 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Pre-cleaned amber glass bottles with Tefon-lined caps. Bottle sizes: 250 mL for Method 552.1; at least 50 mL for Method 552.2.
   Preservatives: Granular ammonium chloride added to bottles by the bottle supplier; ice. Do not use synthetic (blue) ice. A 1% ammonium chloride solution is an acceptable alternative for Method 552.1.
   Other: Labels, marker, safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Caution! "Empty" sample bottles will contain special preservatives. Open them slowly and carefully.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. Method 552.1: If granular preservative has not been added to the bottle, add 2.5 mL of a 1% ammonium chloride solution.
   e. Fill bottle carefully to just overflowing, but do not flush out the ammonium chloride.
   f. Screw cap on securely and shake bottle vigorously for one minute.
   g. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
   h. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.
   b. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.
   c. The maximum holding time is 28 days for Method 552.1 and 14 days for Method 552.2.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METHOD 555 – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: 125-mL glass bottles with Tefon-lined caps pre-cleaned as described in Sec. 4.1.1 of Method 555.
   Preservatives: Granular sodium sulfite (if water is chlorinated); 6 Normal (1:1) hydrochloric acid; ice.
   Other: Labels, marker, pH test strips, DPD chlorine field test kit (if water is chlorinated), safety glasses, phthalate-free gloves and **field reagent blanks**. (The laboratory should provide a field reagent blank to accompany samplers on each compliance monitoring event. It will be opened and preserved in the field.)

3. **Safety Concerns:** Caution! Hydrochloric acid is a strong acid and will cause burns. Caution! "Empty" sample bottles may contain acid or sodium sulfite. Open them slowly and carefully.

4. **Sample collection procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object. Do not rinse bottle.
   d. Fill bottle to shoulder.
   e. **If you are certain that no chlorine is present, proceed to step 4i.**
   f. If sodium sulfite has been added to bottle by bottle supplier, screw cap on securely, shake sample do dissolve this preservative, remove cap, and proceed to step 4h.
   g. Add 5 - 6 mg sodium sulfite to sample, screw cap on securely and shake bottle to dissolve this preservative. Carefully remove cap.
   h. Check a small portion of the sample with field test kit to determine that chlorine has been neutralized. If not, repeat steps 4g and 4h.
   i. Unless acid was added by bottle supplier, add up to 0.1 - 0.2 mL 6N hydrochloric acid to sample to adjust sample to pH 2. Screw cap on securely and swirl sample to mix.
   j. Remove cap. Pour a few drops of sample from bottle to cap, and then pour a drop of sample from the cap on a pH test strip. If a red color appears, the pH is ≤ 2. If a red color does not appear, repeat steps 4i and 4j. Do not dip pH paper into sample. Do

not let pH paper touch the inside of the sample container or the cap.

k. Screw cap on securely.

l. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**

m. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**

a. Keep samples in closed chest at 4 deg. C. away from direct light and solvent vapors.

b. Deliver samples to lab the same day, if possible, at a time acceptable to the lab.

c. The maximum holding time is 14 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

ASBESTOS -- 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED!
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Two unused, pre-cleaned 1-liter polyethylene or glass bottles. Minimum sample volume is two bottles with at least 800 mL per bottle.
   Preservative: Ice or refrigeration at 4 deg. C.
   Other: Labels, marker, safety glasses and phthalate-free gloves.

3. **Safety Concerns:** None.

4. **Sample Collection Procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object.
   d. Rinse each sample bottle several times with source water. (Do not rinse if taking depth samples from a storage tank.) Fill both bottles to approximately 4/5 full.
   e. Replace container cap securely.
   f. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection must be submitted.**
   g. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Ship in a cooler with ice to avoid excessive bacterial or algal growth.
   b. Deliver samples to laboratory the same day if possible at a time acceptable to lab.
   c. The maximum holding time is 48 hours.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

CYANIDE -- 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED!
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system.

2. **Sampling Materials:**
   Containers: Pre-cleaned 1 Liter brown glass or plastic bottle.
   Preservation: Ascorbic acid crystals, sodium hydroxide, ice. (If sulfide is suspected, contact lab before sampling.)
   Other: Labels, marker, pH test strips, DPD chlorine field test kit, safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Caution! Sodium hydroxide is a strong alkali and will cause burns.

4. **Sample Collection Procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until the water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove bottle cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of container or bottle threads to be touched by any object.
   d. Fill bottle to shoulder, leaving room for preservatives and mixing. Do not rinse bottle.
   e. **If you are certain that no chlorine is present, go to step 4i.**
   f. Check a small portion of the sample with field test kit to determine that any chlorine has been neutralized. If chlorine is present, go to step 4g. If it is not, go to step 4i.
   g. Add 0.1 gram ascorbic acid.
   h. Stir or shake sample until ascorbic acid is dissolved. Repeat step 4f.
   i. After all chlorine has been neutralized, add enough sodium hydroxide to raise sample pH to 12 or greater.
   j. Check sample pH by pouring a small amount of sample into container cap, and then pouring a drop from the cap on a pH test strip. If the new color of the test strip does not indicate a pH of at least 12, repeat steps 4i and 4j.
   k. Replace bottle cap securely.
   l. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection must be submitted.**
   m. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep sample in closed chest with ice at 4 deg. C.
   b. Deliver sample to lab the same day if possible at a time acceptable to lab.
   c. The maximum holding time is 14 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

DIOXIN – 10/1/00 (for analysis by EPA Method 1613, Revision B)

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED!
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Four 1-liter amber glass bottles with teflon-lined caps for each sample. Bottles and caps must be pre-cleaned according to Sec. 6.1.1 of EPA Method 1613. Bottle blanks must also be taken. Seek specific instructions from lab performing the analysis before sampling.
   Preservative: Sodium thiosulfate (if water is chlorinated), sulfuric acid, ice.
   Other: Labels, marker, DPD chlorine field test kit (if water is chlorinated), safety glasses and phthalate-free gloves.

3. **Safety Concerns:** "Empty" sample containers may contain sulfuric acid. Place container upright; then open it slowly and carefully.

4. **Sample Collection Procedure:**
   a. *Caution:* The slightest contamination will invalidate the sample.
   b. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   c. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow to eliminate splashing and air bubbles. The stream of water should be no greater than 1/8 inch in diameter.
   d. Carefully remove cap. Do not put cap face down or put it in a pocket. Do not allow inside of cap or bottle to be touched by any object.
   e. Fill bottle to shoulder, leaving room for preservatives and mixing. Do not rinse bottle.
   f. **If you are certain that no chlorine is present, skip to step 4j.** Otherwise, go to step 4g.
   g. Check a small portion of the sample with field test kit to determine that any chlorine has been neutralized. If chlorine is present, go to step 4h. If it is not, go to step 4j.
   h. Add 80 mg. sodium thiosulfate per liter.
   i. Stir or shake sample until sodium thiosulfate is dissolved. Repeat step 4g.
   j. Remove cap. Pour a few drops of sample from bottle to cap, and then pour a drop of sample from the cap on a pH test strip. If the new color indicates that the pH is 9 or less, go to step 4k. If it is greater than 9, carefully adjust it to pH 7 - 9 with sulfuric acid, repeating step 4j after each addition of acid. Do not dip pH paper into sample. Do not let pH paper touch the inside of the sample container or the cap.
   k. Screw cap on securely.

l. Complete sample tag and sample collection form, using waterproof ink. **If proper identification (date and time of sampling) is <u>not</u> submitted, the sample can not be analyzed.**

m. Complete chain-of-custody form if requested by lab or water supply program.

5. Shipping and Handling:

a. Keep samples in closed chest with ice or ice packs at 4°C. from time of sampling until receipt at lab. The holding time is 1 year if kept at 0 - 4 deg. C.

b. Deliver samples to lab the same day if possible <u>at a time acceptable to the lab</u>. **Special instructions may be provided by lab performing the analysis.**

c. *Ice is not a packing material. To prevent breakage, wrap glass bottles in bubble wrap or other protective material.*

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

INORGANICS – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED!
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Container: Pre-cleaned plastic or glass bottle as noted in in the table following Step 5.
   Preservatives: Ice (except as noted in the table following Step 5).
   Other: Labels, marker, safety glasses and phthalate-free gloves.

3. **Safety Concerns:** None.

4. **Sample Collection Procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until the water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove bottle cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of container or bottle threads to be touched by any object.
   d. Fill bottle to shoulder. (See table on back for suggested volumes.)
   e. Screw cap on securely.
   f. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection must be submitted.**
   g. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep sample in closed chest.
   b. Samples must be kept on ice at 4 deg. C., except for fluoride and chloride. Fluoride and chloride samples may be kept on ice without harm to the samples.
   c. Deliver sample to lab the same day if possible at a time acceptable to lab.
   d. Holding times, sample containers and suggested sample volumes are listed in the table on the back of these instructions.

See inorganics table on next page.

Preservation Information for Inorganic Parameters				
Parameter	**Preservation**	**Maximum Holding Time**	**Suggested Sample Size**	**Type of Container**
Alkalinity	Cool, 4° C.	14 days	100 mL	Plastic or Glass
Chloride	None	28 days	50 mL	"
Color	Cool, 4° C.	48 hours	"	"
Conductivity	"	28 days	100 mL	"
Fluoride	None	"	300 mL	"
Odor	Cool, 4° C.	24 hours	200 mL	Glass
o-phosphate	"	48 hours	50 mL	Plastic or Glass
Silica	"	28 days	100 mL	Plastic
Total Diss. Solids	"	7 days	100 mL	Plastic or Glass
Sulfate	"	28 days	50 mL	"
Turbidity	"	48 hours	100 mL	"

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

METALS – 10/1/00

Do not use for "first draw" lead and copper sampling.

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Acid-washed plastic or glass 125 mL to 1 liter bottles with plastic or teflon cap liners.
   Preservative: Approximately 3 mL 1:1 nitric acid per liter. Preservative may already be in bottle. Preservation may be done by lab after receipt of sample.
   Other: Labels, marker, pH test strip paper, safety glasses and phthalate-free gloves.

3. **Safety Concerns:** Caution! Nitric acid is a strong acid and will cause burns.
   Caution! "Empty" sample containers may contain acid. Open them slowly and carefully.

4. **Sample Collection Procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object.
   d. Fill bottle to the shoulder. Do not rinse bottle; it may have a preservative in it.
   e. If acid was added to container by bottle supplier, proceed to step 4g. If the acid is to be added after delivery of sample to the lab, proceed to step 4h.
   f. Add 3 mL 1:1 nitric acid to sample.
   g. Screw cap on securely and shake sample. Then remove cap. Pour a few drops of sample from bottle to cap, and then pour a drop of sample from cap on a pH test strip. If a red color appears, the pH is ≤ 2. If a red color does not appear, repeat steps 4f and 4g. Do not dip pH paper into sample. Do not let pH paper touch the inside of the sample container or the cap.
   h. Screw cap on securely.
   i. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
   j. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in closed chest. Refrigeration is not required.

b. Deliver samples to lab the same day if possible at a time acceptable to the lab. Unpreserved samples must be returned to lab within 14 days.
c. The holding time for mercury is 28 days; for other metals it is 6 months.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

MICROBIOLOGY – COLIFORM – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling materials:**
   Containers: Sterile glass or plastic bottles or sterile sample bags with a minimum capacity of 125mL.
   Preservative: Sodium thiosulfate in liquid form or tablet for chlorinated sites.
   Other: Labels, marker; ice, safety glasses and phthalate-free gloves.

3. **Safety Concerns:** None.

4. **Sample Collection Procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow to eliminate splashing and air bubbles. The stream of water should be no greater than 1/8 inch in diameter.
   c. Carefully remove cap or open bag. Do not put cap face down or put it in a pocket. Do not allow inside of cap or container to be touched by any object.
   d. Do **NOT** rinse the bottle or remove any liquid or tablets in the bottom of the container. This may be the preservative.
   e. Fill container, leaving an airspace of approximately one inch.
   f. Carefully replace cap on container and tighten securely. Replace dust cover if applicable.
   g. Complete sample tag and sample collection form, using waterproof ink. **If proper identification (date and time of sampling) is not submitted, the sample can not be analyzed.**
   h. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and handling:**
   a. Refrigeration at less than 10 deg. C. is preferred.
   b. Keep samples in closed chest out of sunlight. Deliver samples to lab the same day if possible at a time acceptable to the laboratory.
   c. The maximum holding time is 30 hours. (This applies only to drinking water samples.)

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

NITRATE & NITRITE – 10/1/00

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES IF ALL INSTRUCTIONS ARE NOT FOLLOWED!
CONFIRM SCHEDULING AND INSTRUCTIONS WITH LAB BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Container: Pre-cleaned plastic or glass bottles (usually 500 mL).
   Preservatives: Ice; sulfuric acid if "nitrate-plus-nitrite" is to be determined.
   Other: Labels, marker, pH test strip paper, safety glasses and phthalate-free gloves.

3. **Safety Concerns:** "Empty" containers for "nitrate-plus-nitrite" may contain sulfuric acid, which is a strong acid that causes burns.

4. **Sample Collection Procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until the water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove bottle cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of container or bottle threads to be touched by any object.
   d. Fill bottle to shoulder, leaving room for preservatives and mixing. Do not rinse bottle if "nitrate-plus-nitrite" is to be determined.
   e. **For analysis of nitrate and/or nitrite separately or for analysis of "nitrate-plus-nitrite within 48 hours,** proceed to step 4j.
   f. **For analysis of "nitrate-plus-nitrite" after 48 hours,** proceed to step 4g.
   g. If acid was added to container by bottle supplier, proceed to step 4i.
   h. Add 3 mL sulfuric acid to sample.
   i. Screw cap on securely and shake sample. Then remove cap. Pour a few drops of sample from bottle to cap, and then pour a drop of sample from cap on a pH test strip. If a red color appears, the pH is ≤ 2 and proceed to step 4j. If a red color does not appear, repeat steps 4h and 4i. Do not dip pH paper into sample. Do not let pH paper touch the inside of the sample container or the cap.
   j. Screw cap on securely.
   k. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection must be submitted.**
   i. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep sample in closed chest with ice at 4 deg. C.

b. Deliver sample to lab the same day if possible at a time acceptable to lab.
c. The maximum holding time is 48 hours for nitrate, nitrite and unacidified "nitrate-plus-nitrite" samples. It is 28 days for acidified "nitrate-plus-nitrite" samples. However, chlorinated but unacidified nitrate samples may be held up to 14 days.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

RADIONUCLIDES – 10/1/00

(Gross Alpha & Beta, Iodine, Radium, Strontium, Tritium, Uranium & Photon Emitters)

READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES OF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Two pre-cleaned 2-Liter plastic or glass bottles. Three 2-Liter bottles are required for radium. Glass bottles are required for tritium.
   Preservative: None. (Samples will be acidified upon receipt at laboratory as necessary.)
   Other: Labels, marker, safety glasses and phthalate-free gloves.

3. **Safety Concerns:** None.

4. **Sample Collection Procedure:**
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter.
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object.
   d. Fill bottle to the shoulder.
   e. Screw cap on securely.
   f. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
   g. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in a closed chest.
   b. Deliver samples to lab the same day, if possible, at a time acceptable to the laboratory.
   c. The maximum holding time is 8 days for Iodine-131. It is 6 months for the other analytes listed above. Caution: Holding times may be decreased by changes occurring under the new radionuclide rule which is to be finalized later this year.

NEW ENGLAND STATES' DRINKING WATER SAMPLE COLLECTION & PRESERVATION

RADON – 10/1/00

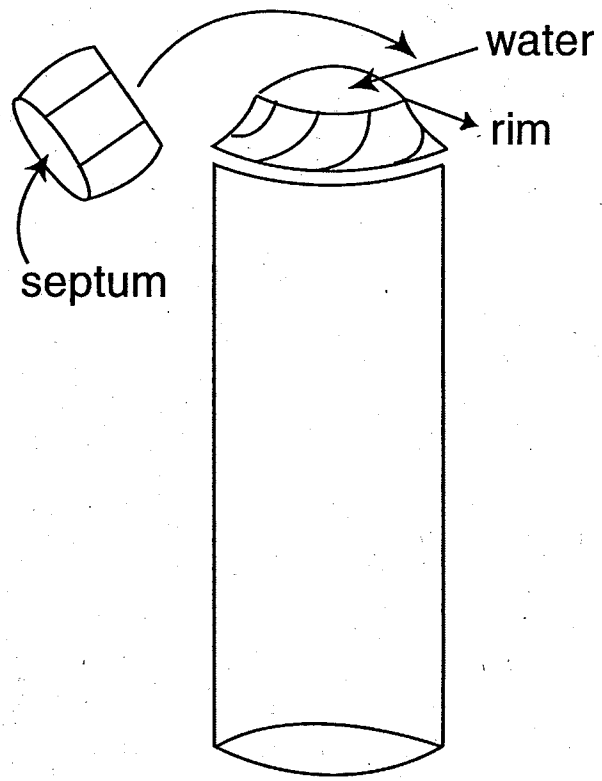
READ INSTRUCTIONS CAREFULLY.
LAB MAY REJECT SAMPLES OF ALL INSTRUCTIONS ARE NOT FOLLOWED.
CONFIRM SCHEDULING AND INSTRUCTIONS BEFORE SAMPLING.
WASH HANDS. WEAR SAFETY GLASSES AND CLEAN NITRILE GLOVES.

1. **Sample Location:** A state-approved location. If one has not been designated, select an appropriate location which is representative of the distribution system. Avoid threaded faucets.

2. **Sampling Materials:**
   Containers: Two pre-cleaned 40-mL glass septum vials with Teflon septa.
   Preservative: None.
   Other: Labels, marker, safety glasses and phthalate-free gloves.
3. **Safety Concerns:** None.

4. **Sample Collection Procedure** – Fill at least two vials as follows:
   a. Remove aerator, screen and all attachments, such as hoses, from the faucet.
   b. Turn on cold water tap and run for 4 to 5 minutes or until water temperature has stabilized, whichever is longer. Then reduce flow so that stream of water is no greater than 1/8 inch in diameter and no bubbles are present. (There must not be any effervescence, i.e., bubbles, in the stream of water.)
   c. Remove container cap. Do not put cap face down or in pocket. Do not allow inside of cap, inside of bottle or bottle threads to be touched by any object.
   d. Fill vial carefully until water is nearly to the rim. Then **gently** add sample to the inverted cap, and **gently** pour sample from the cap to the vial to form water above the rim as shown in the diagram on the back of this sheet. (This will prevent the formation of an air pocket in the vial.) Gently tap the vial to dislodge any air bubbles.
   e. Carefully hook cap over the top of the vial, trying to match the threads as shown in the diagram on the back of these instructions. The Teflon side of the septum must be down (facing the sample).
   f. Screw cap on securely. Check for air bubbles by inverting the vial and gently tapping the cap. **If bubbles are present**, carefully remove the cap and repeat step 4d. If any sample in the vial is spilled, return to step 4c and begin again with a fresh vial. (Note: Samples with bubbles cannot be analyzed.)
   g. Complete sample tag and sample collection form, using waterproof ink. **Proper identification, including the date and time of collection, must be submitted.**
   h. Complete chain-of-custody form if requested by lab or water supply program.

5. **Shipping and Handling:**
   a. Keep samples in a closed chest, and prevent large temperature changes.
   b. Deliver samples to lab the same day, if possible, at a time acceptable to the laboratory.
   c. The maximum holding time is 4 days.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