Sampling Wastewater and Other Water for Volatile Organic Compounds (VOCs) Analysis using USEPA Method 624.1

Please read and understand this entire procedure prior to beginning any sampling.

[NOTE: This procedure provides for the collection of three sets of vials (3 vials each) that are necessary for proper preservation of a complete list of VOC compounds. The maximum holding time for a chilled, properly preserved sample is 14 days from sample collection.]

SAMPLING PROCEDURE

BEFORE YOU BEGIN

(1) CAUTION: Hydrochloric Acid (HCl) is corrosive and can cause immediate skin and eye damage. It can also cause damage to clothing, equipment, etc. Protective gloves and safety glasses are recommended. Flush with plenty of water if exposed. Return the eye-dropper containing the 1:1 HCl solution with sample submission to the laboratory for proper disposal.

(2) Be sure that the inside of the cap and mouth of all vials do not come in contact with anything but the sample water.

SAMPLING STEPS

Proceed to **STEPS I thru III -** Conduct in numerical order.

STEP I

(1) Collect sample in "Bottle A" as gently as possible, minimizing any agitation or aeration.

(2) Retrieve vials labeled "**B, Non-acidified**". Uncap and slowly fill the vial using a sample collected in "Bottle A".

(3) Invert the vial to make sure no air bubbles are present. If a bubble is present open the vial and add additional water until a headspace-free sample is achieved.

(4) Repeat steps 2-3 three times, once for each vial.

STEP II

(1) Refill "Bottle A" from sampling location.

(2) Retrieve vials labeled "C, Preserved with HCl". DO NOT RINSE OUT THE VIAL. Uncap and slowly fill the vial using a sample collected in "Bottle A".

(3) Invert the vial to make sure no air bubbles are present. If a bubble is present open the vial and add additional water until a headspace-free sample is achieved. Invert 3 to 4 times to mix.

(4) Repeat steps 2-3 three times, once for each vial.

STEP III

(1) Refill "Bottle A" from sample location. The sample must be pH adjusted to a value of 4 to 5 pH units prior to filling vials labeled "D, pH Adjusted".

(2) Test the initial pH of the sample in "Bottle A" using a disposable pipette. Collect a 0.5mL aliquot and dispense onto a pH paper.

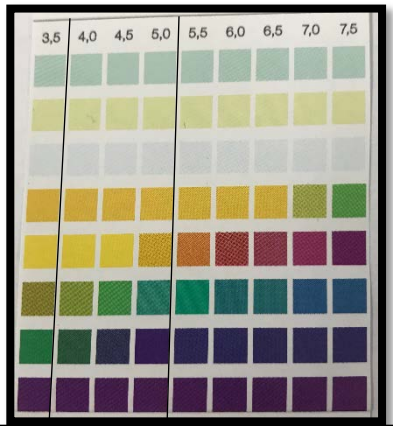
(3) Using the HCl dropper, add 4 drops per 1.0 pH unit change required for the pH value.

(4) Repeat steps 2-3 using a new pH paper until the pH falls in the correct range.

(5) Retrieve vials labeled "D, pH Adjusted". DO NOT RINSE OUT THE VIAL. Uncap and slowly fill the vial using the sample collected and treated in "Bottle A".

(6) Invert the vial to make sure no air bubbles are present. If a bubble is present open the vial and add additional water until a headspace-free sample is achieved.

(7) Repeat steps 5-6 three times, once for each vial.



pH paper must appear as one of the three strips indicated above = 4.0, 4.5, or 5.0.

FINAL STEPS

(1) Record the sampling date, time, site, and name of sampler on the bottle label and the Chain-of-Custody (CoC) Record (FORM-N0013A).

(2) Begin to chill all samples within 15 minutes of collection by placing the samples in a sample refrigerator or in a cooler with ice.

(3) When transporting or shipping samples back to Paragon, it is vital that you protect the 40-mL VOA vials from breakage. Pack with an insulation material (Styrofoam, bubble wrap, etc.) around the vials.

ACKNOWLEDGEMENT

I hereby acknowledge that I ___ have or ___ have not (check one) collected all submitted samples for Non-Drinking Water Volatile Organic Compounds (VOCs) as summarized above. I understand that not collecting samples using the above procedure may jeopardize the validity of any results obtained.

I hereby acknowledge that I ___ do or ___ do not (check one) suspect chlorine to be present in the sample collected.

_____ _____
(Signature) (Date)

Submit this document with the completed Chain-of-Custody Record that accompanies samples.

Attachment 1
Reference Information for
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Bottles & Supplies:

PROVIDED ROUTINELY:
(1) One 4-oz glass bottle labeled “Bottle A”.
(2) Three 40-mL clear glass VOA vials with septa caps containing (No Preservative) labeled “B, Unacidifed”.
(3) Three 40-mL clear glass VOA vials with septa caps containing 1:1 hydrochloric acid (1:1 HCl) labeled “C, Preserved with HCl”.
(4) Three 40-mL clear glass VOA vials with septa caps containing (No Preservative) labeled “D, pH Adjusted”.
(5) One Dropper bottle containing 1:1 hydrochloric acid (1:1 HCl)
(6) One disposable pipette.
(7) Four Color Indicator pH strips.