



Instructions for Taking Water Samples



Preak Thom Village,
SangkatKbalKaoh, Khan MeanChey,
Phnom Penh

Tel: +855 (0) 17 794 393

Email: lab@rdic.org

Water samples are very sensitive because physical and chemical characteristics can change over time if there is no proper collection and storage. Therefore, proper water sample collection techniques are needed to achieve accurate and representative data. Page 3 of this document is a summary page including _ in chart form.

I. Basic Materials for Water Sampling

1. Gloves
2. Sample Bottles provided by RDI (depends on parameters chosen for analysis)
 - 125 mL Sterilized bottle
 - 125 mL Acidified bottle
 - 500 mL Plastic water bottle
3. Permanent Marker
4. Ice bucket or cooler
5. Ice

II. Sampling Procedure

a. Sample collection for most parameters

- Write your **sample ID, Sampling Date, and Sampling Time** neatly on the 500mL bottle using a permanent marker. Note: labels in pen ink tend to fade or smudge greatly.
- If the water source is a well, pump water at least 5 minutes to clear water that has been standing in well
- Wash your hands or put gloves on
- Rinse the 500 mL drinking water bottle two times with the water to be used for sampling
- Pump/pour water sample into the sample bottle and fill completely such that there is *no air space* in the bottle
- Recap the bottle tightly
- Place the sample bottle into an ice bucket/cooler with ice (preferred for best results)
- Record the water source, and/or household characteristics, as desired for your own record

b. Sample collection for E-coli analysis

- *A special sterilized sample bottle is used for bacteria sampling in order to ensure no bacteria are present in the bottle before taking a sample. Do not open the bottle before sampling.*
 - Write your **sample ID, Sampling Date, and Sampling Time** neatly on the 125 mL sterilized bottle using a permanent marker
 - Pump/pour the water sample into the 125mL sterilized bottle, leaving a *small amount of air space*, then cap it tightly
 - Place the sample bottle into an ice bucket/cooler at the temperature of approximately 4°C (it is very important that the sample be kept at a low temperature but not frozen)
 - Record the water source, and/or household characteristics, as desired for your own record
-
-

- For most accurate results, please return the sample bottles for E. coli testing to the RDI Resource Laboratory as soon as possible(**preferably within 24 hours**).

c. Sample collection for Arsenic, Iron and Manganese and Other Metals

- Write your **sample ID, Sampling Date, and Sampling Time** neatly on the 125 mL acidified bottle using a permanent marker
- Put gloves on to avoid the contact with the acid inside the sample container
- Pump/pour/fill the water sample into the 125 mL acidified bottle up to the neck and make sure not to overflow (do not dip the bottle into the water and do not rinse out the bottle or the acid will escape)
- Cap the bottle tightly
- Place the sample bottle into an ice bucket/cooler (preferred but not required)

Note: - *the acidified bottle is used to ensure Arsenic, Iron and Manganese remain in solution and do not oxidize to form solid particles that will not be analyzed in the lab.*

d. Field test

- It is recommended that some parameters (temperature, pH, conductivity, dissolved oxygen) are tested at the field due to short holding times.

e. Additional information

- E.coli sample will be accepted from Monday to Thursday up to 3:00 pm.
- If BOD and COD parameters needed to be tested, the client is required to inform our lab three days in advance.
- To ensure that recontamination is avoided, bottles prepared by RDI Lab are recommended for water sampling. If these bottles are not available, make sure that new and clean bottles are used.
- It is strongly recommended that client make the payment for their requested testing at the time water samples are brought into the lab or within three days after the sample registration date.

For more information, contact the laboratory at the above phone number and email address.

RDI Lab is not responsible for skewed results due to inaccurate sampling, handling, or storing procedures.

Parameter	No preservation - TO BE ANALYZED IMMEDIATELY					Preservation - Refrigeration and/or Acid				
	Bottle head-space	Storing	Recommended Holding Time	Maximum Holding Time	Special Instructions	Bottle head-space	Storing	Recommended Holding Time	Maximum Holding Time	Special Instructions
Alkalinity						No	R	6 h	24 h	fill bottles completely
Ammonia							R	-	24 h	can add H ₂ SO ₄ to pH < 2 for longer holding
Ammonium	No	NA	28 d	28 d			R	7d	7d	
Arsenic		NA		24 h		No	A	-	6 mo	
Bacteria: E. Coli and Total Coliforms						Yes	R	6 h	24 h	
Bacteria Testing by H2S test strip kit						Yes	R	-	24 h	
BOD5		NA	-	2 h ?	-		R	6 h	24 h	-
Calcium	No	NA	28 d	28 d						
Chloride		NA	-	28 d	-					
Chlorine (Combined/Free/Total)	No	NA	-	15 m	keep out of sunlight, no agitation, glass bottle					
COD		NA	-	25 m	glass bottles preferred		R, A	7 d	28 d	H ₂ SO ₄ to pH<2, glass bottles preferred
Conductivity		NA	-	25 m	-		R	24 h	?	
Color							R	-	48 h	
Copper		NA	-	24 h	-		A	-	6 mo	HNO3 to pH < 2, neutralize in lab before analysis
Cyanide TOTAL							R	-	14 d	NaOH to pH12 + .6g Ascorbic Acid
Dissolved Oxygen	No	NA	-	15 min		No	R	-	25 m	
Fluoride		NA	28 d	28 d	-		R			
Hardness (Carbonate)							R	-	180 d	
Hardness (TOTAL)		A		6 mo	HNO3 to pH<2		R	-	180 d	
Iron							R	-	24 h	can add HNO3 to pH < 2 in lab for longer holding
Lead		NA	-	24 h	glass bottles preferred		A	-	6 mo	HNO3 to pH < 2, neutralize in lab before analysis
Magnesium	No	NA	28 d	28 d	-		R			
Manganese		NA	-	24 h	-		A	-	6 mo	HNO3 to pH < 2, pH to 4-5 before analysis
Mercury							R, A	14 d	28 d	HNO3 to pH < 2, glass bottles, specially prepared sample bottles
Nitrate							R	-	48 h	can add H ₂ SO ₄ to pH<2 in lab for longer holding time
Nitrite							R	24 h	48 h	-
pH	No		-	15 min						
Potassium	No	NA	28 d	28 d						
Phosphate							R	-	48 h	can add H ₂ SO ₄ or HCl to pH<2 in lab, no phosphate detergents when preparing bottles
Total Phosphorus							R	-	48 h	Add H ₂ SO ₄ or HCl to pH<2, no phosphate detergents when preparing bottles
Salinity		NA	-	6 mo	-					
Sodium	No	NA	28 d	28 d	-		R			
Sulfate							R	-	28 d	refrigerate if organic matter present
Temperature	-	NA		15 min						
Total Dissolved Solids							R	-	7 d	
Total Suspended Solids							R	-	7 d	
Turbidity							R	24 h	48 h	
R - Refrigerate to 4 degrees C										
A - Acidify										
NA - No supplemental actions applicable										