



Environmental Services Division

Analytical Sample Acceptance Policy

Effective Date: 6-04-12

Approved By: _____ **Date:** _____
Technical Director

Approved By: _____ **Date:** _____
QA Officer

Analytical Sample Acceptance Policy

- 1) This document is written in accordance with standards adopted by the *the NELAC Institute (TNI)*. All incoming work is evaluated against the criteria listed below. If any sample is received at the laboratory and does not comply with regulatory requirements, the laboratory reserves the right to reject the sample. If the sample does not meet sample acceptance criteria, and the client still requests sample analysis, all affected results are qualified on the laboratory report. The deviation from the regulatory requirement *with explanation* is documented on the chain-of-custody.

All Public Water System (PWS) total coliform samples must be received and logged into the Laboratory Information Management System (LIMS) at the laboratory. See the Chain of Custody/Sample Handling SOP, LAB-025.

- 2) Samples must arrive with a Chain of Custody filled out completely. The following information must be recorded.
 - ▶ Client name, address, phone number and fax number (if available)
 - ▶ Project name and/or number
 - ▶ The sample identification
 - ▶ Date, time and location of sampling
 - ▶ The collectors name
 - ▶ The sample type
 - ▶ The container description
 - ▶ The total number of each type of container
 - ▶ Preservatives used
 - ▶ Analysis requested
 - ▶ Requested turnaround time (TAT)
 - ▶ Any special instructions
 - ▶ Purchase Order number or billing information (e.g. quote number) if available
 - ▶ Date and time that each person received or relinquished the sample(s), including their signed name
 - ▶ Date and time of receipt must be recorded between the last person to relinquish the samples and the person who receives the samples in the lab, and the date and time must be exactly the same
 - ▶ **Information must be legible.**
- 3) Proper sample containers with adequate volume for the analysis and necessary QC are required for each analysis requested. The sample must be uniquely identified, at a minimum, using an indelible ink marking on the container. At sample acceptance, a water-proof label using indelible ink will be attached to the container. Samples must not be removed from the sample receiving area by any analyst without being affixed with an identifying label.

- 4) Samples must be preserved according to the requirements of the requested analytical method. This includes samples (other than water samples for metals analysis) being chilled from above freezing to below 6°C. The temperature of the cooler upon receipt is noted on the chain of custody. When possible, the temperature of at least one sample in the cooler is verified and noted on the chain of custody. **Note:** Samples that are hand delivered to the laboratory immediately after collection may not have had time to cool sufficiently. In this case, the samples are considered acceptable as long as there is evidence that the chilling process has begun (arrival on ice).

Chemical preservation (pH) of the samples is verified upon receipt with pH paper. (NOTE: The pH for oil and grease samples is checked by transferring a small amount of sample using a glass rod to a portion of pH paper. The glass rod is then rinsed with hexane back into the sample container. The use of a glass rod prevents loss of sample.) The sample custodian documents that the pH is <2 or >12 (if applicable) on the chain-of-custody. The containers are examined for any signs of damage or contamination. The Technical Director or designee and the client will be notified immediately if there is a discrepancy. If analyses are still performed at the client's request, all affected results are qualified to indicate improper preservation.

- 5) Samples submitted for total coliform must be in an ESD-issued sterile container; at least 100mL of sample is required for analysis. No bacteriological samples are accepted after 2:00PM Monday through Thursday. No samples are accepted after 1:00PM on Fridays and days before a SRA holiday. All other samples are received between 8:00AM and 3:30PM Monday through Thursday.
- 6) The laboratory performs a residual chlorine check on every sample submitted to the laboratory for bacteriological analysis. If any chlorine is detected/suspected in a bacteriological sample based on analysis or odor, the sample must be rejected.
- 7) "Ice" samples for total coliform analysis are stored at above freezing to below 6°C to allow samples to thaw. Samples can be held overnight if collection time allows. Under no circumstances should the sample be heated. A 100mL portion of thawed, liquid sample is transferred into a sterile bacteriological bottle for analysis.
- 8) Samples must be received within the regulatory specified holding times. SRA ESD Water Quality Laboratory makes every effort to analyze samples within the regulatory holding time. Samples must be received in the laboratory with enough time to perform the sample analysis. Except for short holding time samples (<48 hours), sample must be received with at least 48 hours remaining on the holding time for SRA to ensure analysis.
- 9) Analyses such as pH, DO, residual chlorine, color, sulfite, and turbidity are analyzed as soon as possible in the laboratory.
- 10) A label with the acidification date/time must be affixed to all metals samples that are submitted for analysis on the day that they are collected and/or acidified. This label will allow the metals analyst to identify samples that are ready for processing (have been held for a minimum of 24 hours).

Table I – Analysis Parameters

Parameter	Container	Minimum Quantity (mL)	Preservative	Holding Time
Alkalinity, Total	Plastic/Glass	100	Above freezing to 6°C	14 days
Alkalinity, Phenolphthalein	Plastic/Glass	100	Above freezing to 6°C	14 days
BOD 5 day	Plastic/Glass	1000	Above freezing to 6°C	48 hours
BOD, Carbonaceous	Plastic/Glass	1000	Above freezing to 6°C	48 hours
Carbon, Total Organic	Glass	40	H2SO4	28 days
COD	Plastic/Glass	100	H2SO4	28 days
Chloride by IC	Plastic/Glass	50	Above freezing to 6°C	28 days
Chlorine, Residual	Plastic/Glass	50	None	Analyze Immediately
Chlorine, Free	Plastic/Glass	50	None	Analyze Immediately
Chlorophyll a	Opaque Plastic	500	Above freezing to 6°C	14 days
Chlorophyll a Filtration	Opaque Plastic	500	Above freezing to 6°C	48 hours
Coliform, Fecal	Sterile Plastic	100	Above freezing to 6°C	8 hours
Coliform, Total	Sterile Plastic	100	Above freezing to 6°C	30 hours
Colisure™	Sterile Plastic	100	Above freezing to 6°C	30 hours
Color, True/Apparent	Opaque Plastic	250	Above freezing to 6°C	24 hours
Conductivity	Plastic/Glass	100	Above freezing to 6°C	28 days
Enterococcus by Enterolert	Sterile Plastic	100	Above freezing to 6°C	8 hours
Escherichia by Colilert	Sterile Plastic	100	Above freezing to 6°C	8 hours
Fluoride by IC	Plastic/Glass	100	Above freezing to 6°C	28 days
Hardness Total	Plastic/Glass	100	HNO3	28 days
Metals, ICP-MS	Plastic/Glass	100	Trace-Metal Grade HNO3	6 months
Nitrogen, Ammonia	Plastic/Glass	500	H2SO4	28 days
Nitrogen, Nitrate by IC	Plastic/Glass	50	Above freezing to 6°C	48 hours
Nitrogen, Nitrite by IC	Plastic/Glass	50	Above freezing to 6°C	48 hours
Nitrogen, Total Kjehldahl	Plastic/Glass	500	H2SO4	28 days
Oil and Grease	Glass	1000	HCL	28 days
pH	Plastic/Glass	100	None	Analyze Immediately

Parameter	Container	Minimum Quantity (mL)	Preservative	Holding Time
Ortho-Phosphate	Plastic/Glass	50	Above freezing to 6°C	48 hours
Phosphorus, Total	Plastic/Glass	500	H2SO4	28 days
Salinity	Glass	100	None	28 days
Solids, Total Dissolved	Plastic/Glass	100	Above freezing to 6°C	7 days
Solids, Total Suspended	Plastic/Glass	500	Above freezing to 6°C	7 days
Solids, Volatile Suspended	Plastic/Glass	100	Above freezing to 6°C	7 days
Sulfate by IC	Plastic/Glass	100	Above freezing to 6°C	28 days
Sulfite	Plastic/Glass	100	Above freezing to 6°C	Analyze Immediately
Turbidity	Plastic/Glass	100	Above freezing to 6°C	Analyze Immediately

Table 2 – Sample and Result Reject Codes for Public Water System Total Coliform Samples

Sample Reject Codes	
FOR	ENTER
Heavy turbidity present	Heavy turb
No chlorine residual recorded on the chain-of-custody (too low <0.2 mg/L Free and <0.5 mg/L Total)	No cl res
Excessive chlorine residual (>10mg/L for Free and Total or odor)	Hi cl res
Insufficient sample; less than 100mL	Insuf samp
Sample leaked during transit	Samp leak
Chain-of-custody discrepancy; form incomplete	COC discr
Suspicious sample; heavy chlorine/alcohol smell; ice in sample	Susp samp
Improper container	Impr cont
No air bubble; sample container too full	No air spc
Result Reject Codes	
FOR	ENTER
Elapsed holding time of 30 hours	Too old
Heavy silt present	Heavy silt
Too numerous to count colonies; Heavy bacteria present	TNTC colny
Lab error	Lab error

Recommendations for packing samples for shipment.

- ▶ Pack samples in ice rather than “Blue” ice packs.
- ▶ Soil sample containers should be placed in plastic zip-lock bags. The containers often have dirt around the top and do not seal very well, and are prone to intrusion from melted ice water.
- ▶ Glass containers should be wrapped with bubble-wrap or paper (newspaper, paper towels) and then placed in plastic zip-lock bags.
- ▶ Extra cooler space should be filled with bubble wrap.
- ▶ Dry ice should be used to ship chlorophyll-a filters.