

# **Safe Drinking Water Act (SDWA) Chemical & Radiological Compliance Sampling**

## **Pocket Guide**

(For EPA Region 6 Tribal Water Systems)



**Southwest  
Environmental  
Finance  
Center**

**July 2016**  
Hall Environmental  
Analysis Laboratories



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## **Introduction**

Compliance sampling as required by the Safe Drinking Water Act (SDWA) plays an important role in protecting public health.

This guide is to be used by EPA Region 6 Tribal Public Water Systems (PWS) who use Hall Laboratories in Albuquerque, NM for SDWA chemical and radiological compliance sample testing.

This Pocket Guide along with the compliance Sampling Schedule provided each year by EPA Region 6 should be used together to ensure that compliance samples are taken in a timely manner according to established schedules. Ensuring that this is done is the responsibility of each water system.

For questions regarding SDWA Compliance Sampling Schedules contact the EPA Region 6 Tribal Drinking Water Program Coordinator – Kim Ngo Kidd – at (214) 665-7158 or [Ngo.Kim@epa.gov](mailto:Ngo.Kim@epa.gov).

For questions regarding laboratories contact Matt Ziegler at (505) 681-7435 ([mattz@unm.edu](mailto:mattz@unm.edu)) or Rose Afandi at (505) 620-5191 ([rafandi@unm.edu](mailto:rafandi@unm.edu)) at the Southwest Environmental Finance Center (SW EFC).

Information in this Pocket Guide is subject to change at any time. The latest version of this Pocket Guide is always available at the bottom of our Tribal Drinking Water Program Webpage.

## **Scheduling Compliance Sampling**

Each PWS should have a designated Regulatory Compliance Officer (RCO). The RCO is the person at the water system who is responsible for understanding the compliance schedule for each water system, scheduling sample collection and ensuring that compliance samples are taken as required. The RCO can either be responsible for collecting the samples themselves or delegating the collection responsibility to someone else.

**Compliance sampling needs to be scheduled according to the annual Sampling Schedule provided by EPA Region 6.** Close attention needs to be given to any seasonal or quarterly collection schedules. For example, disinfection byproduct sampling for chlorinated systems monitoring annually or once every 3 years should only be scheduled between July and September. If sampling occurs outside of this seasonal window then the sample results cannot be used for compliance purposes.

**Sampling should only occur when the water system is operating under normal conditions.** If compliance samples are scheduled for collection and the system is not operating normally, then sampling should be postponed until normal operating conditions are restored.

**Sampling should always be scheduled earlier in the monitoring period rather than later** to ensure that there is plenty of time left in the period in case a problem arises and compliance sample collection has to be rescheduled.

## **Ordering Bottles**

**It is the responsibility of each water system to order and obtain sampling materials.**

Prior to ordering bottles, determine what is required by using the EPA Region 6 Annual SDWA Sample Schedule for each water system. You can use Table 1 on the next page to help keep track of what you need to order.

Plan ahead and try to pick up sample bottles if you are already coming into Albuquerque for something else. If the water system is on a quarterly schedule for any chemicals, it is always a good idea to have extra sample containers on hand.

Bottles can be ordered by phoning Hall Labs in Albuquerque at **(505) 345-3975**.

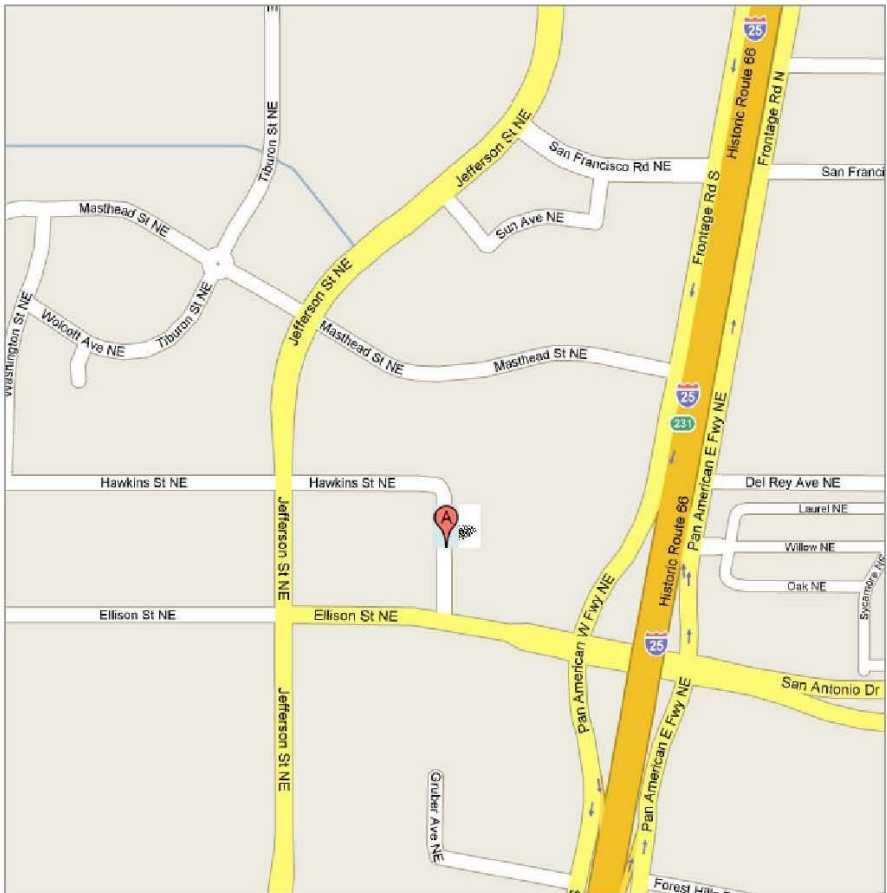
**\*\*\*\*When ordering bottles, be sure to tell the person at Hall Labs that the bottles are for an EPA Region 6 Tribal Drinking Water System\*\*\*\***

Table 1 – Sample Bottles to Order  
From Hall Labs (505) 345-3975

<b>Chemical/s Sampling For:</b>	<b>Number Required:</b>
Nitrate-Nitrite	
Drinking Water Metals (IOC)	
Fluoride (IOC)	
Cyanide (IOC)	
Total Arsenic	
Volatile Organic Chemicals (VOCs)	
Synthetic Organic Chemicals (SOCs)	
Radiologicals (gross alpha, gross beta, combined radium 226/228 and uranium)	
Total Uranium	
Disinfection Byproducts (TTHMs and HAA5s)	

## Picking up Bottles – Map to Hall Labs

Hall Labs is located at 4901 Hawkins St NE, Suite #A in Albuquerque. When picking up bottles and before leaving the lab, please go over your order to ensure that you have all of the bottles you ordered and any preservatives you might need. Also make sure that **Sample Request ID Number Labels** have been included with your order.



A. Hall Environmental Analysis Laboratory  
4901 Hawkins St NE # A, Albuquerque, NM - (505) 345-3975



## **Preparing to Collect Samples**

Prior to collecting compliance samples, the following materials need to be assembled:

- Annual SDWA Sample Schedule for each water system
- Sampling Plan if sampling for Stage 1 or 2 DBPs
- Bottles
- Pen & Marker
- Chain of Custody/s
- Sample Request ID Number Labels (HALxxxxxx)
- Chlorine Test Kit
- Cooler with bagged ice or blue ice

Once everything is assembled, use Table 2 and Table 3 to help identify what bottles are used for each of the chemicals being sampled. If needed, use a marker and write on each bottle what chemical or chemical group it is for.

**Table 2 - Hall Labs Chemical/Radiological Sample  
Bottles, Preservatives & Hold Times**

<b>Chemical</b>	<b>Bottle</b>	<b>Preservative</b>	<b>Hold Time</b>
<b>Nitrate</b>	125 mL plastic	< 6° C	48 hours
<b>Nitrite</b>	125 mL plastic	< 6° C	48 hours
<b>Nitrate-Nitrite</b>	125 mL plastic	< 6° C & H <sub>2</sub> SO <sub>4</sub>	28 days
<b>IOCs – Fluoride</b>	125 mL plastic	< 6° C	28 days
<b>IOCs – Total Cyanide</b>	500 mL brown plastic	< 6° C, Ascorbic Acid & post NaOH	14 days
<b>IOCs – Drinking Water Metals</b>	500 mL plastic	< 6° C & HNO <sub>3</sub>	6 months (mercury 28-days)
<b>Radiologicals (Gross Alpha/Beta, Combined Radium 226/228, Uranium)</b>	4-1 Liter bottles and 1-500 mL bottle	HNO <sub>3</sub>	6 months
<b>VOCs</b>	3-40 mL VOAs with no headspace	< 6° C & HCl (Ascorbic Acid for Chlorinated samples)	14 days
<b>SOCs</b>	Variety – see Table 3	< 6° C & variety – see Table 3	14 days
<b>DBP – TTHM</b>	2-40 mL VOAs with no headspace	< 6° C & Sodium Thiosulfate	14 days
<b>DBP – HAA5</b>	2-40 mL VOAs with no headspace	< 6° C & Ammonium Chloride	14 days

Table 3 – Hall Labs Full SOC Kit Contents

<b>Chemical/s</b>	<b>Container</b>	<b>Preservative</b>
<b>Diquat</b>	1-250 mL Plastic	Sodium Thiosulfite
<b>515.3 Herbicides &amp; 548 Endothall</b>	500 mL Amber	Sodium Thiosulfite
<b>525.2 SemiVolatiles</b>	2-1 L Ambers	Sodium Thiosulfite +1 bottle with HCl
<b>504.1 EDB/DBCP</b>	2-40 mL VOAs	Sodium Thiosulfite
<b>Glyphosphate</b>	1-40 mL VOA	Sodium Thiosulfite
<b>539.2 Carbamates</b>	2-40 mL VOAs	Sodium Thiosulfite + Pottasium Dihydrogen Citrate
<b>505-Pesticides</b>	1-40 ml VOA	Sodium Thiosulfite

## Collecting Samples

- Identify the sampling location using the water systems Annual SDWA Sample Schedule, Entry Point (EP) Tags, and/or Sampling Plans



- Remove any aerators
- Don't rinse out the bottles
- Hold the bottles at a 45° angle when you fill them
- Don't splash when filling the bottles

## **A Word on Collecting Organic Samples**

- Gas, oil based fluids, smoking, hairspray, mousse, cologne, perfume, breath spray, mouth wash can contaminate organics samples
- Make sure all vehicle or other engines are off when collecting samples as exhaust can also contaminate organics samples
- Wash hands thoroughly or wear gloves when taking samples
- Trip Blanks – VOC samples from Hall Labs for EPA Region 6 water systems may include a trip blank. Do not open the trip blank. It should be left untouched in the cooler.

## Collecting Nitrate-Nitrite

### **Bottle Requirements**

1-125 mL plastic bottle  
preserved with H<sub>2</sub>SO<sub>4</sub> (sulfuric acid)

### **Sampling Location**

The Entry Point to the Distribution  
System (EP)

### **Sampling Instructions**

*Take caution with the preservative –  
sulfuric acid is a concentrated acid.*



1. If not already running, turn on the well and treatment system that is scheduled for compliance sampling and let run until the water quality produced is judged to be what is produced under normal operating conditions. If sampling after a direct pumping tank then start at step 2.
2. Flush through the sampling point.
3. Reduce the sample stream and take and record the free residual chlorine as applicable on the COC.
4. Fill the 125mL plastic bottle (with H<sub>2</sub>SO<sub>4</sub>) for Nitrate-Nitrite to the shoulder. Cap and mix the sample.
5. Label the sample bottle, add the Sample Request ID Number Label and fill out the COC.
6. Samples need to be kept at <6°C and if possible, delivered to the lab the same day that they are taken.

## Collecting Fluoride

### **Bottle Requirements**

1-125 mL plastic bottle  
(unpreserved)

### **Sampling Location**

The Entry Point to the  
Distribution System (EP)

### **Sampling Instructions**



1. If not already running, turn on the well and treatment system that is scheduled for compliance sampling and let run until the water quality produced is judged to be what is produced under normal operating conditions. If sampling after a direct pumping tank then start at step 2.
2. Flush through the sampling point.
3. Reduce the sample stream and take and record the free residual chlorine as applicable on the COC.
4. Fill the 125mL plastic bottle (unpreserved) for Fluoride to the shoulder and cap the sample.
5. Label the sample bottle, add the Sample Request ID Number Label and fill out the COC
6. Samples need to be kept at  $<6^{\circ}\text{C}$  and if possible, delivered to the lab the same day that they are taken.

## Collecting Drinking Water Metals

### **Bottle Requirements**

1-500 mL plastic bottle  
preserved with HNO<sub>3</sub>  
(nitric acid)

### **Sampling Location**

The Entry Point to the  
Distribution System (EP)

### **Sampling Instructions**

*Take caution with the  
preservative – nitric acid is a  
concentrated acid.*



1. If not already running, turn on the well and treatment system that is scheduled for compliance sampling and let run until the water quality produced is judged to be what is produced under normal operating conditions. If sampling after a direct pumping tank then start at step 2.
2. Flush through the sampling point.
3. Reduce the sample stream and take and record the free residual chlorine as applicable on the COC.
4. Fill the 500 mL plastic bottle for Drinking Water Metals to the shoulder. Cap and mix the sample.
5. Label the sample bottle, add the Sample Request ID Number Label and fill out the COC.
6. Samples need to be kept at <6°C and if possible, delivered to the lab the same day that they are taken.

## Collecting Total Cyanide

### **Bottle Requirements**

1-500 mL brown plastic bottle preserved with Ascorbic Acid and a vial of NaOH (sodium hydroxide) taped to the outside.

### **Sampling Location**

The Entry Point to the Distribution System (EP)

### **Sampling Instructions**



***Take caution with the preservative – sodium hydroxide is caustic.***

1. If not already running, turn on the well and treatment system that is scheduled for compliance sampling and let run until the water quality produced is judged to be what is produced under normal operating conditions. If sampling after a direct pumping tank then start at step 2.
2. Flush through the sampling point.
3. Reduce the sample stream and take and record the free residual chlorine as applicable on the COC.
4. Fill the 500 mL brown plastic bottle for Cyanide to the shoulder. Cap and mix the sample. Uncap the bottle and add the vial of NaOH. Cap and mix the sample.
5. Label the sample bottle, add the Sample Request ID Number Label and fill out the COC.
6. Samples need to be kept at  $<6^{\circ}\text{C}$  and if possible, delivered to the lab the same day that they are taken.



## Collecting Radiologicals

### **Bottle Requirements**

4-1 Liter plastic bottles  
preserved with  
 $\text{HNO}_3$  (nitric acid)

### **Sampling Location**

The Entry Point to the  
Distribution System  
(EP)

### **Sampling Instructions**



***Take caution with the preservative – nitric acid is a concentrated acid.***

1. If not already running, turn on the well and treatment system that is scheduled for compliance sampling and let run until the water quality produced is judged to be what is produced under normal operating conditions. If sampling after a direct pumping tank then start at step 2.
2. Flush through the sampling point.
3. Reduce the sample stream and take and record the free residual chlorine as applicable on the COC.
4. Fill each of the 4-1 Liter bottles and the 500 mL bottle to the shoulder. Cap and mix the samples.
5. Label the sample bottles, add the Sample Request ID Number Labels and fill out the COC.
6. Samples need to be kept at  $<6^{\circ}\text{C}$  and if possible, delivered to the lab the same day that they are taken.

## Collecting VOCs

### **Bottle Requirements**

3-40 mL VOA vials with ascorbic acid for chlorinated samples and an HCl (hydrochloric acid) preservative dropper bottle.

### **Sampling Location**

The Entry Point to the Distribution System (EP)

### **Sampling Instructions**

Activities including pumping gas, working with oil or hydraulic fluid and smoking prior to sampling VOCs can result in a contaminated sample.

***Take caution with the preservative – hydrochloric acid is a concentrated acid.***

1. If not already running, turn on the well and treatment system that is scheduled for compliance sampling and let run until the water quality produced is judged to be what is produced under normal operating conditions. If sampling after a direct pumping tank then start at step 2.
2. Flush through the sampling point.
3. Reduce the sample stream and take and record the free residual chlorine as applicable on the COC.
4. Fill the three 40 ml VOA vials halfway.
5. Add **7 drops** of hydrochloric acid to each vial.



6. Fill the vials until a reverse meniscus forms at the top (see photo). Cap and turn the bottle upside down and tap to ensure that there are no air bubbles present. If air is observed, uncap the vial and add a little sample until there is no air present in the sample.



7. The lab will not accept the samples if air is present.
8. Label the sample bottles, add the Sample Request ID Number Labels and fill out the COC.
9. Samples need to be kept at  $<6^{\circ}\text{C}$  and if possible, delivered to the lab the same day that they are taken.

## Collecting SOCs



### **Bottle Requirements**

Various – See Table 2 “Hall Labs Full SOC Kit Contents”

### **Sampling Location**

The Entry Point to the Distribution System (EP)

### **Sampling Instructions**

***Take caution with the preservative – hydrochloric acid is a concentrated acid.***

Samples need to be kept at  $<6^{\circ}\text{C}$  and delivered to the lab the same day that they are taken

1. If not already running, turn on the well and treatment system that is scheduled for compliance sampling and let run until the water quality produced is judged to be what is produced under normal operating conditions. If sampling after a direct pumping tank then start at step 2.

2. Flush through the sampling point.
3. Reduce the sample stream and take and record the free residual chlorine as applicable on the COC.
4. Fill the larger bottles to their shoulder. Cap and mix the samples.
5. Fill the 1-Liter amber bottle with the hydrochloric acid vial taped to it to the shoulder. Cap and mix the sample. Uncap the bottle and add the vial of HCl. Cap and mix the sample.
6. For the 6-40 mL VOA vials, fill the vials until a reverse meniscus forms (see photo). Cap and turn the bottle upside down and tap to ensure that there are no air bubbles present. If air is observed, uncap the vial and add a little sample until there is no air present.
7. The lab will not accept samples if air is present.
8. Label the sample bottles, add the Sample Request ID Number Labels and fill out the COC.
9. Samples need to be kept at  $<6^{\circ}\text{C}$  and if possible, delivered to the lab the same day that they are taken.



## Collecting Stage 1 & 2 DBPs (TTHMs and HAA5s)



### **Bottle Requirements**

TTHMs – 2-40 mL Clear VOAs preserved with Sodium Thiosulfate

HAA5s – 2-40 mL Amber VOAs preserved with Ammonium Chloride

### **Sampling Location**

The location of Chlorine Maximum Residence Time (MRT) in the distribution system that is identified on the water systems Stage 1 & 2 DBP Sampling Plans

### **Sampling Instructions**

**TTHMs and HAA5s must always be sampled together in order to be counted for compliance purposes.**

1. Flush through the sampling point until main distribution water is coming through the sampling point.

2. Reduce the sample stream and take and record the free residual chlorine as applicable on the COC.
3. Fill the vials until a reverse meniscus forms at the top (see photo). Cap and turn the bottle upside down and tap to ensure that there are no air bubbles present. If air is observed, uncap the vial and add a little sample until there is no air present in the sample.
4. The lab will not accept samples if air is present
5. Label the sample bottles, add the Sample Request ID Number Labels and fill out the COC.
6. Samples need to be kept at  $<6^{\circ}\text{C}$  and if possible, delivered to the lab the same day that they are taken.



## Labeling Bottles

It is a requirement to label the sample bottles using the Hall Labs **Sample Request ID Number Labels**. For each sample request, put the label/s on the sample bottle/s and put a duplicate label on the COC in the correct location for that request.

For example, when labeling VOC bottles with Sample Request ID Number Labels, each of the 3 VOC sample bottles should be labeled using an identical Sample Request ID Number Label. In addition another identical Sample Request ID Number Label should be placed in the appropriate spot on the COC where you are requesting that VOCs be analyzed.

Sometimes you might have some of the same Sample Request ID Number Labels leftover after you label the bottles and the COC. If this is the case, throw away the leftover labels.

In addition to the Sample Request ID Number Labels it is advisable to use a permanent marker and write directly on the bottle the following information:

- PWS Name & Number
- Sample Location (Facility Name or ID)
- Date & Time of Collection
- Analysis Requested



## **Filling out the Chain-of-Custody**

The Chain-of-Custody (COC) is an important document that needs to be completely filled out in order for a sample result to be used for compliance purposes.

The Hall Labs COC that should be used for submitting compliance samples has been specifically customized for EPA Region 6 Tribal Drinking Water systems. An example of a blank version of this COC is shown on the next page. You can get the latest version of this COC from the lab or by contacting either Rose or Matt or on the Resource web page for the SW EFC Tribal Drinking Water Program.

# EPA Region 6 Drinking Water

## Chain-of-Custody Record

\* Denotes Required Information



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

4901 Hawkins NE · Albuquerque, NM 87109  
Tel. 505-348-3975 Fax 505-345-4107

www.hallenvironmental.com

Client (Water Utility):		Regulatory Compliance Officer:		PWS ID *	PWS Name
Address:		Facility ID *		Facility Name	
Phone #:	Sampling Point ID *		Sampling Location		
Email:		Sampler (please print) *			
Sample Information: Is sample for Compliance? If Yes, <input type="checkbox"/> Routine or <input type="checkbox"/> Confirmation? If No, <input type="checkbox"/> Special		Last Name		First Name	
		Chlorine? <input type="checkbox"/> Yes _____ mg/L <input type="checkbox"/> No		Sample Temp. (Lab Use):	
<input type="checkbox"/> Grab or <input type="checkbox"/> Composite? <input type="checkbox"/> Finished or <input type="checkbox"/> Raw Water?		Container Type and #		Pres. Type	
Date	Time	Sample Request ID No.	HEAL No. (Lab Use)		
		HAL Label Here			
		HAL Label Here			
		HAL Label Here			
		HAL Label Here			
		HAL Label Here			
Date:	Time:	Reinquished By:	Received By:		
Date:	Time:	Reinquished By:	Received By:		
Remarks:					
Nitrate-Nitrite (preserved w/ H <sub>2</sub> SO <sub>4</sub> )					
Nitrate Only					
Nitrite Only					
Total Cyanide (IOCs)					
Fluoride (IOCs)					
Drinking Water Metals (IOCs)					
Total Arsenic					
VOC's by method 524					
Trihalomethanes - TTHMs & Haloacetic Acids - HAA5s (DBP)					
Bromate					
SOCs					
Radionuclides (gross alpha, gross beta, combined Ra226/228, combined uranium)					
Combined Uranium					
Air Bubbles? (Y or N) - Lab Use					

## Instructions for Filling out the COC

1. Use a different Chain-of-Custody (COC) for each sampling location.
2. \*\*\*\*\*Do not make duplicate requests for the same contaminant or contaminant group on the same COC.\*\*\*\*\*
3. Starting at the top left of the COC, fill out the contact information for the Client (Water Utility) and the Regulatory Compliance Office for this Public Water System (PWS), this is who the report will be sent to.
4. Fill out the Sample Information section using the definitions below:
  - a. **Routine** - Samples taken for compliance with the Safe Drinking Water Act (SDWA). Refer to the EPA Sampling Schedule for each PWS.
  - b. **Confirmation** - Samples are for compliance purposes and are taken at the request of EPA Region 6 to verify the level of a specific contaminant or contaminant group.
  - c. **Special** - Samples taken are not for compliance with SDWA.
  - d. **Grab** - A single sample collected at a particular time and place that represents the composition of the water only at that time and place.
  - e. **Composite** - A series of small samples taken over a given time period and combined as one sample in order to provide a summary of water quality.

- f. **Finished** - Samples are taken after the treatment process at the entry point. If there is no treatment process, then the water is considered finished water.
  - g. **Raw** - Samples are taken before the treatment process and represent the water quality of the water source.
5. If sampling for SDWA compliance purposes at the Entry Point to Distribution, use the metal tag or the Sampling Schedule for the water system and on the COC, fill out PWS ID, Facility ID, Sampling Point ID, PWS Name and Facility Name. This tag information is required for compliance purposes. You may fill out Sampling Location with a local name or you may leave it blank. If sampling for chlorinated disinfection byproducts in distribution, use a Facility ID of **01000**, a Facility Name of **Distribution System** and the Sampling Point ID in your Stage 2 DBP sampling plan.
  6. Under Sampler fill out the full name of the person collecting the samples.
  7. If you are sampling finished water and the system is disinfected with chlorine, mark **Yes** and take a Free Chlorine Residual and write it down in this box. If the system is not disinfected mark **No**.
  8. For each requested contaminant or contaminant group, use one row and mark the Date and Time the sample was collected. Also write down the Container Type and Number as well as the Preservative Type. If the request has multiple containers and preservatives (like SOCs), then mark as 'Various' in these boxes. Put an X in the

appropriate row under the group for which you are requesting analysis be done.

9. For each request (row) put a Sample Request ID No. label in the correct spot on this COC and then place the duplicate Sample Request ID No. Labels on the corresponding sample bottles for that request.
  
10. Make sure to sign this COC with the Date and Time whenever the sample and COC are transferred from one individual to the next or when delivered to the lab.

## **Delivering Samples to the Lab**

Samples must be kept cold between when the samples are collected and when they are delivered to the lab.

Samples should be delivered to the lab the same day they are taken but if something comes up you should be aware of the Hold Times in Table 3 that are associated with each sample type.

Be aware of any changes to the normal laboratory schedules for sample acceptance especially around major holidays.

Pickup any sample bottles and Sample Request ID Number Labels needed for future sample collection requirements.

# **EPA Region 6 Drinking Water** **Contaminant Groups**

## **Disinfection By Product Rule (DBPR)**

For systems using chlorine disinfection:

Total Trihalomethanes (TTHMs) - chloroform, bromoform, bromodichloromethane, dibromochloromethane

Haloacetic Acids (HAA5s) - monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, dibromoacetic acid

For systems using ozone disinfection:

Bromate

For surface water systems using conventional filtration and disinfection:

Raw water alkalinity, raw water total organic carbon (TOC), treated water TOC

## **Inorganic Chemicals (IOCs) – 11**

Drinking Water Metals (9) - arsenic, antimony, barium, beryllium, cadmium, chromium, mercury, selenium, thallium

Total Cyanide

Fluoride

## **Volatile Organic Chemicals (VOCs) -21**

benzene / carbon tetrachloride / chlorobenzene / o-dichlorobenzene / p-dichlorobenzene / 1,2-dichloroethane /

1,1-dichloroethylene / cis-1,2-dichloroethylene / trans-1,2-dichloroethylene / dichloromethane / 1,2-dichloropropane / ethylbenzene / styrene / tetrachloroethylene / toluene / 1,2,4-trichlorobenzene / 1,1,1-trichloroethane, 1,1,2-trichloroethane / trichloroethylene / vinyl chloride / xylenes (total)

## **Synthetic Organic Chemicals (SOCs) – 29**

2,4-D / 2,4,5-TP (Silvex) / alachlor (Lasso) / atrazine / benzo(a)pyrene (PAHs) / carbofuran / chlordane / dalapon / di(2-ethylhexyl) adipate / di(2-ethylhexyl) phthalate / 1,2 – dibromo-3-chloropropane (DBCP) / dinoseb / diquat / endothall / endrin / ethylene dibromide / glyphosate / heptachlor / heptachlor epoxide / hexachlorobenzene / hexachlorocyclo-pentadiene / BHC-gamma (Lindane) / methoxychlor / oxamyl (Vydate) / pentachlorophenol / picloram / polychlorinated biphenyls (PCBs) (Aroclors) / simazine / toxaphene

## **Gross Alpha, Combined Radium (226/228) and Uranium (Radionuclides – 4)**

alpha emitters (gross alpha) / beta/photon emitters (gross beta) / radium 226 & 228 (combined) / uranium (combined)

## **Lead & Copper Rule (LCR)**

Coordinate with EPA Region 6



## Definitions & Abbreviations

**Caustic** – Capable of burning, corroding, dissolving, or eating away by chemical action

**COC** – Chain-of-Custody

**DBP** – Disinfection Byproduct

**Direct Pumping** – Used to describe a water storage tank where the inlet is separate from the outlet.

**EPA** – Environmental Protection Agency

**EP** – Entry Point to the Distribution System – Identified by a metal tag containing sampling point information.

**H<sub>2</sub>SO<sub>4</sub>** – Sulfuric Acid – A preservative used for nitrate-nitrite.

**HAA5** – Haloacetic Acids (DBP from chlorination)

**HCl** – Hydrochloric Acid – A preservative used for VOCs and some SOCs

**HNO<sub>3</sub>** – Nitric Acid – A preservative used for Drinking Water Metals and Radiologicals.

**Hold Time** – The time allowed between a sampling event and when sample analysis must occur.

**IOC** – Inorganic Chemical

**NaOH** – Sodium Hydroxide – A preservative used for Total Cyanide.

**PWS** – Public Water System

**RCO** – Regulatory Compliance Officer

**Sample Request ID Number Labels** – Number labels issued by Hall Labs that are meant to identify which sample request on the COC is associated with which bottle/s.

**SDWA** – Safe Drinking Water Act

**SOC** – Synthetic Organic Chemical

**Trip Blank** – A sample of analyte-free media taken from the laboratory to the sampling site and returned to the laboratory unopened. A trip blank is used to document contamination attributable to shipping and field handling procedures.

**TTHM** – Total Trihalomethanes (DBP from chlorination)

**VOA Vial** – Volatile Organic Analysis Vial

**VOC** – Volatile Organic Chemical





**Southwest  
Environmental  
Finance  
Center**

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