INSTRUCTIONS TO SUBMITTERS FOR COMPLETING THE INTERACTIVE ANALYTICAL REQUEST FORM FOR THE SLD CHEMISTRY BUREAU, AND SAMPLING REQUIREMENTS.

Introduction

The individual chemistry sections of Air & Metals / Water Chemistry (A&M/WC), Organics (OR), and Radiochemistry (RC), are listed on a single-page form designed to be used by the NMED Bureaus, or other SLD clients submitting environmental samples for analysis. Please use the most recent version of the request form, as posted on the SLD website. Note that the Air & Metals and Water Chemistry sections were combined in 2016.

One Form Per Sample

As always, the SLD requires that each analytical sample has one form associated with it, and that forms and samples arrive together. The 7-digit Request ID numbers are normally sent out for submitters to attach to the form and the sample containers. Note that it is possible to send in several sample containers with one form and one Request ID number; e.g. OR request SDWA Full Suite Semi-volatiles. Also note that a sample may have several requests associated with it – submitters need not send multiple forms for each sample.

Interactive Form Completion

The unified form has been designed with interactive fields and drop-down menus for completion on a computer, and subsequent printing using the 'Print Form' button. Alternatively, the form may also be printed and completed by hand, in part – the 'Date/Time Collected' and "Field Remarks' portions will probably be hand-written in many cases, after other parts have been completed electronically and the form printed. All fields shown in blue font on the screen may be completed electronically. Please complete all required demographic information for the type of sample you are collecting, as well as user code (for billing) and submitter code (for results reporting) from the drop-down menus. The chain of custody portion of the form is not required for every sample, but should be initiated by the submitter when requirements mandate this. For compliance drinking water samples, use tamper-proof tape for a container seal. For full evidentiary samples, use evidence tape for the seal.

Note that analyses must be chosen from one of the drop-down menus for the A&M, WC, CTAR, OR, RC, sections. Lists of the individual tests, their costs, and approximate results turn-around times are shown in the Fee Schedule on the SLD Chemistry Bureau Web Page, and in the following sample collection guidance tables.

Please note that you cannot use the same form for multiple analyses from different chemistry sections; use one form per sample per section. Additional comments, or requests for additional analyses where appropriate, can be included in the 'Additional Analyses' text box (e.g. split samples for Gross α and β in the RC section with Uranium by ICP/MS should have the second analysis entered in the 'Additional Analyses' text box).

Group Analyses & Sampling Requirements

Please read the following pages, which describe some of the group analyses and sampling requirements.

Air & Metals Section Sample Collection Guidelines and Group Analyses

Collect either 250 ml (NMED) or 1 liter (SDWA Pb & Cu) of sample in an SLD-approved container. Preserve with Nitric Acid (if available) to pH < 2. Containers, forms and request ID labels are available from SLD at no charge. Please list the desired metals or group analyses in the 'A&M ANALYSES' selection field, available as drop-down menus for on-line users. The common analyses requested are:

ICP-OES Scan (Al Ba Be B Cd Ca Cr Co Cu Fe Mg Mn Mo Ni K Si Ag Na Sr V Zn for EPA method 200.7).

SDWA Group 1 (Sb As Ba Be Cd Cr Hg Ni Se Tl for EPA method 200.8).

SDWA Lead and Copper (for EPA method 200.8 by ICP-MS).

Hardness (Ca, Mg).

Individual Metals (Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Ge Pb Mg Mn Hg Mo Ni K Se Si Ag Na Sr Tl U V Zn for EPA 200 series; 200.7/200.8 and 200.8/245.1 for Hg).

Questions? – contact the Air & Metals section supervisor, (505) 383-9033 or line supervisor, (505) 383-9032.

SLD test # (note group tests containing metals deletions, and their replacements, effective July 1st 2010)

MAJOR ANIONS: Alkalinity - bicarbonate, carbonate, pH, Chloride, Sulfate and Total Dissolved Solids (TDS). Collect in a 1-liter cubitainer, store and ship at 4°C.

NUTRIENTS: Nitrate + Nitrite, Ammonia, Total Kjeldahl Nitrogen, and Phosphate, Total. Minimum sample volume is one quart (1 liter). Preserve with 2 mL of sulfuric acid (H_2SO_4) per the 1-liter (1 quart) sample and store & ship at 4°C.

SWQB SS ANIONS GROUP: Alkalinity - bicarbonate, carbonate, pH, Chloride, Sulfate, Total Dissolved Solids (TDS) and Total Suspended Solids (TSS). Collect in a 1-liter cubitainer, store and ship at 4°C.

SWQB NPS ANIONS GROUP: Alkalinity - bicarbonate, carbonate, pH, Chloride, Sulfate, Fluoride, Color, Conductivity, Total Dissolved Solids (TDS) and Total Suspended Solids (TSS). Collect in a 1-liter cubitainer, store and ship at 4°C.

SAMPLE PRESERVATION:

NO_3^-/NO_2^-, TOC, NH_3, TKN, PO_4^{3-} (all), add 2 mL of sulfuric acid (H_2SO_4) per 1-liter sample.
CN^- (free/total), add 50 % sodium hydroxide (NaOH) solution to achieve and maintain a pH > 12. If the water is chlorinated, add ascorbic acid to neutralize residual chlorine.
All tests - refrigerate at 4°C (applies to all the above tests, also).

Questions - contact the Water Chemistry section supervisor, (505) 383-9033, or line supervisor, (505) 383-9035.

SLD ANALYSIS (Test name)	METHOD REFERENCE (EPA unless noted)	EPA HOLDING TIME	SAMPLE VOLUME REQUIRED	SAMPLE VESSEL	PRESERVATIVE
Alkalinity	SM2320B	14 days	250 ml	Plastic/glass	Cool 4 °C
Ammonia (as N)	350.1 modified	28 days	100 ml	Plastic/glass	H_2SO_4 to pH < 2, cool 4 °C
Cyanide, Free Cyanide, Total	SM4500CN-F 335.4	14 days	1 liter	Plastic cubitainer	NaOH to pH > 12, cool 4 °C, ascorbic acid to remove chlorine
Chloride	300.0 Part A	14 days	100 ml	Plastic/glass	Cool 4 °C
Color*	SM2120B	48 hours**	100 ml	Plastic bottle	Cool 4 °C
Conductivity	SM2510B	28 days	100ml	Plastic bottle	Cool 4 °C
Fluoride	SM4500-F	28 days	100 ml	Plastic bottle	Cool 4 °C
Nitrate + Nitrite	353.2	28 days	100 ml	Plastic bottle	H_2SO_4 to pH < 2, cool 4 °C
Nitrite*	353.2	48 hours**	100ml	Plastic bottle	Cool 4 °C
Phosphate - Low Concentration	365.4	28 days (presvd.) or 48 hours**	1 liter	Plastic cubitainer	H_2SO_4 to pH < 2, cool 4 °C
Phosphate - Total	365.4	28 days	1 liter	Plastic cubitainer	H_2SO_4 to pH < 2, cool 4 °C
Sulfate	300.0 Part A	28 days	100 ml	Plastic or glass	Cool 4 °C
Total Dissolved Solids (TDS)	SM2540C	7 days	1 liter	Plastic cubitainer	Cool 4 °C
Total Kjeldahl Nitrogen (TKN)	351.2	28 days	1 liter	Plastic cubitainer	H_2SO_4 to pH < 2, cool 4 °C
Total Organic Carbon (TOC)	SM5310	28 days	250 ml	Amber glass, certified clean	H_2SO_4 to pH < 2, cool 4 °C
Total Suspended Solids (TSS)	SM2540D	7 days	1 liter	Plastic cubitainer	Cool 4 °C
Turbidity*	180.1	48 hours**	1 liter	Plastic cubitainer	Cool 4 °C

* Note – please allow at least 50% of the published hold time for laboratory analysis time.

** This is the recommended times with no preservative. For samples with hold times of 48 hours or less, 5 days' advance notice is normally required.

Organic Section Sample Collection Guidelines and Group Analyses

Test Description	Approx. No. of Analytes Reported	Maximum Holding Time (Days)	Sample Containers For Water	General Preservation Footnotes	Preservation Comments
VOLATILE ORGANIC COMPOUNDS (VOCs):					
Mass Spec VOCs (EPA 8260B) or Appendix IX Mass Spec VOCs	63+	14	40 ml Glass Vial in duplicate	A, B, C	
SDWA VOCs I (EPA 524.2, travel blank required from lab)	63	14	40 ml Glass Vial in duplicate	A, B, C	Use 25 mg ascorbic acid preservative for all cases.
SDWA Trihalomethanes (EPA 524.2, travel blank required from lab)	4	14	40 ml Glass Vial in duplicate	B, C, D	
SEMIVOLATILE ORGANIC COMPOUNDS (SDWA ANALYSES):					
SDWA VOCs II EDB, DBCP & TCP (EPA 504.1, travel blank required)	2	14	40 ml Glass Vial in duplicate	B, C, D	Do not acidify
SDWA Acid Herbicides (EPA 515.4)	15	14	250 ml Amber Glass Bottle	C, E	Do not acidify
SDWA Carbamates (EPA 531.2)	10	28	40 ml Amber Glass Vial	C, D	Sample bottles must be refrigerated before and after use.
SDWA Diquat (EPA 549.2)	1	7	1 liter Amber Plastic	C, E	
SDWA Endothall (EPA 548.1)	1	7	250 ml Amber Glass Bottle	C, E	
SDWA Glyphosate (EPA 547)	1	14	40 ml Amber Glass Vial	C, E	
SDWA Haloacetic Acids (EPA 552.2) SDWA Haloacetic Acids (EPA 552.3)	6	14	60 ml Amber Glass Vial in Duplicate	C, D	
SDWA Synthetic Organic Compounds + Total Chlordane, Toxaphene, PCBs (EPA 525.2/525.3 and 508.1)	75	14	1 liter Amber Glass in duplicate	A, C, E	After sampling, wait one minute before adding HCl to a pH of 2
NON-DRINKING WATER ANALYSES:					
Base/Neutral Acid (B/N/A) Semi-volatiles, no phenols (EPA 8270D)	88	7	1 liter Amber Glass in duplicate	C	
1,4- Dioxane (EPA 522)	1	28	250 ml Amber Glass Bottle	C	12.5 mg Sodium Sulfite 250 mg Sodium Bisulfate
Polychlorinated Biphenyls (PCB), Organochlorine Pesticides (EPA 8082, 608/8081)	39	7	1 liter Amber Glass in duplicate	C	

Preservation Footnotes:
A = Reduce pH to 2 with Hydrochloric Acid, HCl.
B = Fill vials completely; i.e. no air bubble.
C = Cool samples to 4ºC after collection.
D = As supplied by SLD, sample containers contain preservatives (check container label); Do not rinse container.
E = As supplied, kits can be used for either chlorinated systems or non-chlorinated systems. Since dechlorinating agents are added by the lab, do not rinse the bottles. After sample collection, add the acid indicated for SDWA Synthetic Organic Compounds + Total Chlordane, Toxaphene, PCB samples, and, if necessary, Diquat samples.

Hold Times
For samples with hold times of 14 days or less, the lab must receive the samples before half the hold time has expired, to allow sufficient time for extraction and/or analysis.

Questions - contact the Organics section supervisors at (505) 383-9030 (main supervisor), (505) 383-9031 (volatiles line supervisor), (505) 383-9036 (semi-volatiles line supervisor).

RADIOLOGICAL SDWA REQUIREMENTS EFFECTIVE DEC-03:

The 2003 revision revamped a few requirements pertaining to required analyses and sampling which in brief are: a) requires a Ra-228 analysis without a substitutions option, b) establishes a U-mass MCL of 30. μg/L with a substitution of gross α option (141.26.a.5), c) retains gross α substitution for Ra-226 option, d) retains compositing for gross α, U-mass, Ra-226, and Ra-228, and e) converts to the 3-6-9 monitoring frequency employing defined detection levels & MCLs. These changes will make it more difficult for the laboratory to determine your needs, especially if you are using 'grandfathered' data. Therefore, for the Drinking Water Sequential request, the gross α will be measured, if gross α U-nat referenced is not ≤ 3. pCi/l, EPA recommendation, (or Detection Limit ≥ 1.), the Ra-226 will be measured. Also, if the gross α is ≥ 7.5 pCi/l, U-mass will be measured. When the U-mass*0.67 subtracted from the gross α is not < 7.5 pCi/l, a U-234/238 analysis will be done unless 'No U-234/8' is entered into the 'Additional Analyses' text box. Note: no longer will Ra-226 trigger a Ra-228. If only a Ra-228 is desired, then select only the Radium-228 request. Even if only a U-mass is desired, submit as an RC sample, and select Uranium by ICP/MS.

If you will be using gross α values from prior samples as a surrogate for either Ra-226 and/or U-mass, and therefore definitely do not want either of those analyses, specify this in the 'Field remarks' text box.

SAMPLE VOLUME:

- Drinking Water and SWQB Sequential Analysis Flow Scheme: As per drop-down menu.
- Gross alpha/beta only, waters: These may be of 1 liter (1 quart) size.
- Ra-226: These may be of 1 liter (1 quart) size.
- Ra-228: These may be of 2 liter (1 quart) size.
- Others: Contact the section supervisor.

PRESERVATION:

- Sequential Analysis Flow Scheme: Preserve with nitric acid to a pH < 2.0; 5 ml of conc. HNO_3 per gallon is generally sufficient.

Questions - contact the Radiochemistry section supervisor to discuss program specific needs, (505) 383-9037.