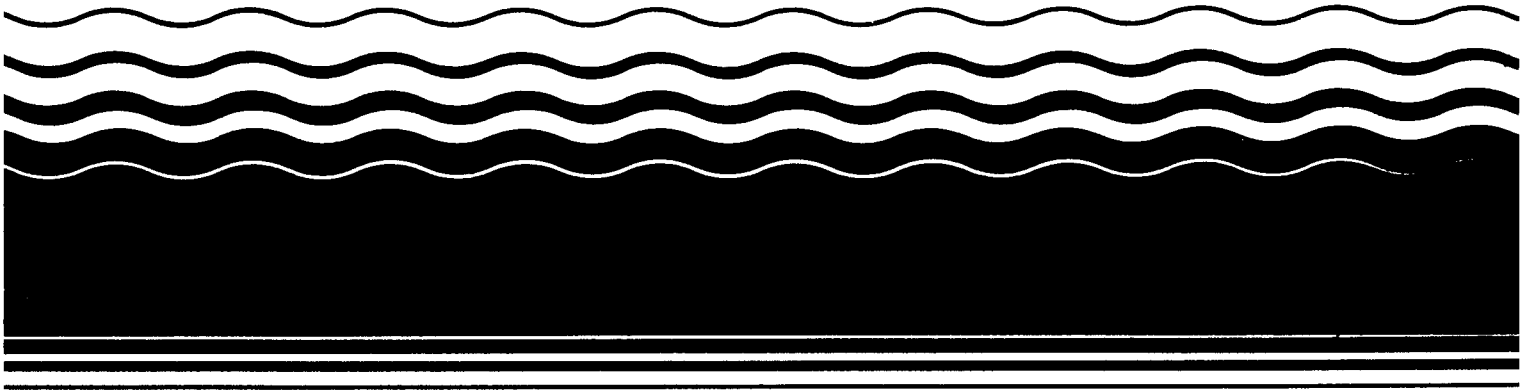

Superfund



Samplers Guide to the Contract Laboratory Program



EPA/540/P-90/006
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Sampler's Guide to the Contract Laboratory Program

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NOTICE

The policies and procedures set forth here are intended as guidance to Agency and other government employees. They do not constitute rulemaking by the Agency, and may not be relied on to create a substantive or procedural right enforceable by any other person. The Government may take action that is at variance with the policies and procedures in this manual.

For further information on the CLP or to obtain additional copies of the *Sampler's Guide to the CLP* or the *User's Guide to the CLP*, contact the Sample Management Office at 703-557-2490 or FTS 557-2490. In addition, these documents, as well as the entire current Superfund bibliography, may be purchased from the National Technical Information Service (NTIS) of the United States Department of Commerce at 703-487-4650.

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FOREWORD

This document has been prepared by the Contract Laboratory Program (CLP) Sample Management Office (SMO) specifically for the guidance and direction of program clients. The *Sampler's Guide to the CLP* is designed to clarify sampling procedures necessary to submit samples for CLP analysis. The *Sampler's Guide to the CLP* acts as a reference for the Regions and sampling contractors to promote consistency in sampling procedures throughout the Regions and ensure the proper adherence to CLP requirements. This document is intended to be used as a supplement to, not a replacement for, existing Regional sampling instructions and should accompany the *User's Guide to the CLP* to provide a thorough overview of the CLP.

SECTION I: THE CLP NETWORK

A. CLP Orientation

The CLP is a national program of commercial contractor laboratories for service to the ten U.S. Environmental Protection Agency (EPA) Regions. The CLP supports EPA's Superfund effort, a nationwide cleanup of designated hazardous waste sites. This effort was originally established under the 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and presently exists under the 1986 Superfund Amendments and Reauthorization Act (SARA).

The CLP provides chemical analytical services using state-of-the-art technology for the ten EPA Regions. The program is structured to ensure legally defensible analytical results for use in supporting EPA enforcement actions or other user needs. To achieve this goal, the CLP relies on its quality assurance procedures and detailed documentation.

The CLP's analytical programs are continually developed, managed and updated through coordination by the National Program Office.

B. National Program Office

The CLP is directed by the National Program Office (NPO), in EPA Headquarter's Analytical Operations Branch (AOB), Hazardous Site Evaluation Division (HSED), Office of Solid Waste and Emergency Response (OSWER), located in Washington, D.C. The NPO is comprised of the AOB Branch Chief, Regional Operations Section Chief and personnel, and the Analytical Methods Implementation Section Chief and Administrative Project Officers (APOs).

The NPO responsibilities include the following:

- developing and managing CLP objectives,
- generating, administrating and evaluating CLP analytical and support services contracts,
- directing CLP quality assurance in coordination with overall OSWER quality assurance activities, and
- policy and budget formation and implementation.

In coordinating Superfund sampling efforts, the NPO is supported by the Sample Management Office (SMO), the Regional Technical Project Officers (TPOs), and the Regional Sample Control Centers (RSCCs) (see Figure 1).

Sample Management Office

The Sample Management Office (SMO) is contractor-operated and provides management, operations, and administrative support to the CLP. SMO routinely receives Regional analytical requests, coordinates and schedules sample analyses, tracks sample shipments and analyses, receives and checks data for completeness and compliance, processes laboratory invoices, and maintains a repository of sampling records and program data. In addition, SMO supports procurement/IFB development, Statement of Work production, and CLP meeting/conference coordination.

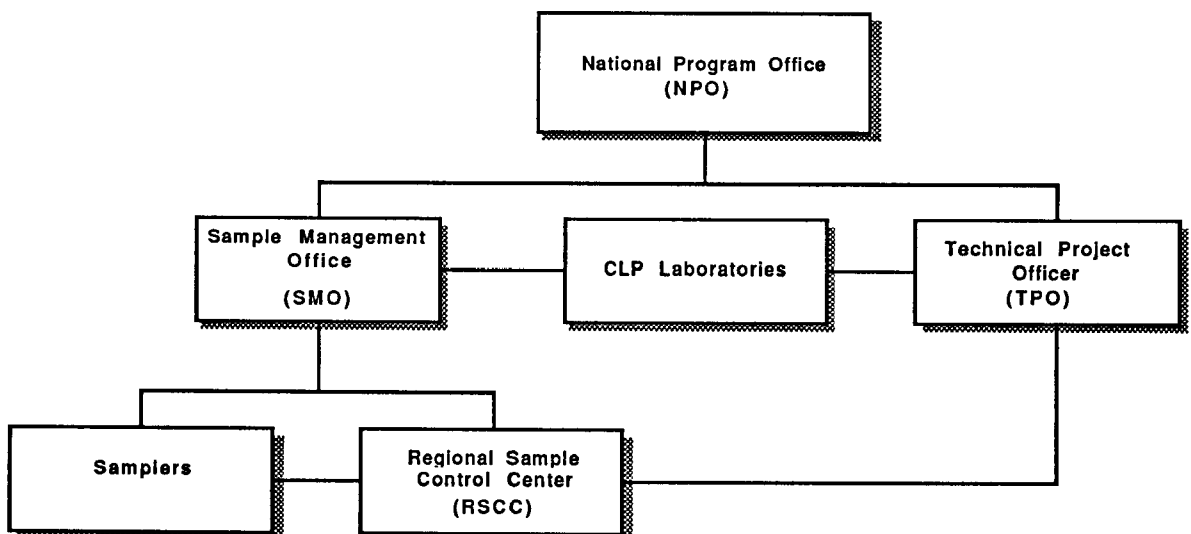
Regional Technical Project Officer

The Regional Technical Project Officer (TPO) monitors the technical performance of contract laboratories located in his/her Region. The TPO works closely with the APOs in responding to laboratory technical problems and leads laboratory on-site evaluations.

Regional Sample Control Center

The Regional Sample Control Center (RSCC) coordinates Regional sampling efforts and serves as the central point of contact for sampling questions and problems. The RSCC assists in coordinating the level of Regional sampling activities to correspond with the monthly projected demand for analytical services.

Figure 1. CLP Sampling Players



SECTION II: ANALYTICAL SERVICES

The CLP provides a range of chemical analytical services to the user community through several analytical programs. These programs include Routine Analytical Services (RAS), Special Analytical Services (SAS), and RAS plus SAS requests.

A. Routine Analytical Services

Routine Analytical Services (RAS) are analytical services performed by laboratories who have been awarded Government contracts under the CLP. These contractor laboratories (CLP laboratories) operate under various analytical Statements of Work (SOWs) to analyze specific environmental samples. RAS matrices include water and soil/sediments only. Samplers may request an analytical fraction of each RAS program. For example, RAS-VOAs may be ordered without RAS-semivolatiles or RAS-pesticides/aroclor. However, RAS-pesticides may not be ordered without RAS-Aroclors as fractions may not be split. The RAS programs are shown with their corresponding fractions and concentrations in Figure 2.

Figure 2. Available Routine Analytical Services

RAS ANALYTICAL PROGRAM (SOW Name)	FRACTIONS	CONCENTRATION
FULL ORGANIC	VOLATILES (VOAs) SEMIVOLATILES (SVs) PESTICIDE/AROCLORS	LOW OR MEDIUM
FULL INORGANIC	TOTAL METALS DISSOLVED METALS CYANIDE	LOW OR MEDIUM
HIGH CONCENTRATION ORGANIC	VOAs EXTRACTABLES AROCLORS/TOXAPHENES	HIGH
HIGH CONCENTRATION INORGANIC	METALS CYANIDE pH CONDUCTIVITY	HIGH
LOW CONCENTRATION WATER FOR ORGANIC COMPOUNDS	VOAs SVs PESTICIDE/AROCLORS	LOW
LOW CONCENTRATION WATER FOR INORGANIC ANALYTES	TOTAL METALS CYANIDE NITRITE/NITRATE FLUORIDE	LOW
LOW CONCENTRATION WATER FOR VOAs-ONLY	VOAs	LOW

B. Special Analytical Services

Special Analytical Services (SAS) are analytical services that allow greater flexibility with parameters, matrices, methods, and data turnaround times than RAS. The EPA Region defines its needs for the SAS through a SAS Client Request form and specifies analytical methods and quality control requirements. SMO then arranges analytical subcontracts with chosen laboratories to meet the requests of the Region.

The following are examples of SAS requests:

- Asbestos
- Radiochemistry
- Air analyses
- Oil and grease
- Geotechnical, e.g., grain size

C. RAS plus SAS

RAS plus SAS samples are analyzed for standard RAS parameters with additional SAS requirements. The following circumstances exemplify RAS plus SAS:

- Analyzing for full organics with faster turnaround times than offered under the full organics RAS program
- Analyzing for total metals, a RAS inorganic program, plus sulfate, which is not available through RAS
- Analyzing for 2,3,7,8-PCDD and 2,3,7,8-PCDF In water samples

SECTION III: SAMPLE COLLECTION

A. CLP Sample Definition

RAS Sample

A CLP RAS sample is defined as one matrix, either water or soil/sediment (never both). The RAS sample is further defined as consisting of all the sample aliquots from one station location, for each matrix and RAS analytical program. Therefore, one CLP sample may consist of many bottles and vials.

For example, let's say you are sampling at Leroy's Pond. You are instructed to collect one water sample and one soil/sediment sample each to be analyzed for full organics and full inorganics. First, identify the fractions of the RAS analytical program. VOAs, SVs, and pesticide/Aroclors all comprise the RAS full organics sample. Total metals and cyanide fall under the RAS full inorganics program. So, you have two RAS analytical programs, full organics and full inorganics.

Next, identify the sample matrix. Your instructions call for one water sample and one soil/sediment sample for each RAS analytical program. Since you have identified two RAS analytical programs, you must collect four separate samples: one water sample and one soil/sediment sample to be analyzed for RAS organics and one water sample and one soil/sediment sample to be analyzed for RAS inorganics (see Figure 3).

Since all of the filled containers for one matrix (water or soil/sediment) and one analytical program (organic or inorganic) compose the sample, you will have more than one jar or vial for each entire sample collection.

Figure 3. Sampling at Leroy's Pond

DIRECTIONS: COLLECT ONE WATER SAMPLE AND ONE SOIL/SEDIMENT SAMPLE EACH TO BE ANALYZED FOR FULL ORGANICS AND FULL INORGANICS.

MATRIX	RAS ANALYTICAL PROGRAM	
	FULL ORGANICS	FULL INORGANICS
WATER	VOAs SVs PESTICIDES/AROCLORS	TOTAL METALS CYANIDE
SOIL/ SEDIMENT	VOAs SVs PESTICIDES/AROCLORS	TOTAL METALS CYANIDE
TOTAL NUMBER OF SAMPLES COLLECTED = 4	2 ORGANIC SAMPLES (1 Water + 1 Soil/Sediment)	2 INORGANIC SAMPLES (1 Water + 1 Soil/Sediment)

SAS Sample

CLP SAS samples may consist of unusual matrices such as oil, sludge, or dust depending on the Region's specification. Requirements for SAS samples vary and are detailed in the SAS subcontract. SAS samples must be indicated by a SAS number (see Section IV: Sample Documentation). Consult your RSCC for details regarding the type of SAS sample to collect.

RAS plus SAS Sample

RAS plus SAS samples are also determined by the Region. Follow RAS sample collection procedures and fill out the SAS part of the analysis on the Traffic Report (TR) (see Section IV: Sample Documentation). For example, a RAS plus SAS request may be to analyze for total metals plus sulfate. In this case, follow the procedures for collecting full inorganic samples and note that the sample is also to be analyzed for sulfate on the inorganic TR.

B. Sample Volume

The collection of proper sample volume is imperative to the success of sample analysis. If you do not collect sufficient sample volume, the analysis of all required parameters and complete quality control determinations may not be possible. Therefore, it is especially important to note the volume requirements for each sample and to take care to collect the amount specified.

The following tables show the requirements for sample volume collection and container type for each RAS program and fraction. Container type codes are detailed in Section III, Part C, Sample Containers. Note: Collect water and soil samples for volatiles analysis so that the containers are completely filled to the top with no air pockets.

Figure 4. Full Organics

SAMPLE MATRIX	CONCENTRATION	FRACTION	VOLUME	CONTAINER TYPE
WATER	LOW	VOAs	80 mL	B
		SVs	2L	A, K, or H
		PESTICIDES/ AROCLORS	2L	A, K, or H
SOIL/SEDIMENT	LOW/MEDIUM	VOAs	240 mL	D
		SVs	3 oz.	F or G
		PESTICIDES/ AROCLORS	3 oz.	F or G

Figure 5. High Concentration Organics

SAMPLE MATRIX	CONCENTRATION	FRACTION	VOLUME	CONTAINER TYPE
WATER OR SOIL/ SEDIMENT	HIGH	VOAs	2 oz.	B or D
		SVs	4 oz.	F
		PESTICIDE/ AROCLORS		

Figure 6. Full Inorganics

SAMPLE MATRIX	CONCENTRATION	FRACTION	VOLUME	CONTAINER TYPE
WATER	LOW	TOTAL METALS	1 L	C, H or L
		DISSOLVED METALS	1 L	C or L
		CYANIDE	1 L	C or L
	MEDIUM	TOTAL METALS	1 L	C or L
		DISSOLVED METALS	1 L	C or L
		CYANIDE	1 L	C or L
SOIL/SEDIMENT	LOW/MEDIUM	TOTAL METALS	6 OZ.	For G
		CYANIDE	6 OZ.	For G

Figure 7. High Concentration Inorganics

SAMPLE MATRIX	CONCENTRATION	FRACTION	VOLUME	CONTAINER TYPE
WATER OR SOIL/SEDIMENT	HIGH	TOTAL METALS	6 oz. TOTAL	F
		DISSOLVED METALS		
		CYANIDE		
		pH		
		CONDUCTIVITY		

Figure 8. Low Concentration VOA-Only

SAMPLE MATRIX	CONCENTRATION	FRACTION	VOLUME	CONTAINER TYPE
WATER	LOW	VOAs	80 mL	B

Figure 9. Low Concentration Water for Organic Compounds

SAMPLE MATRIX	CONCENTRATION	FRACTION	VOLUME	CONTAINER TYPE
WATER	LOW	VOAs	80 mL	B
		SVs	2 L	A, K, or H
		PESTICIDE/ AROCLORS	2 L	A, K, or H

Figure 10. Low Concentration Water for Inorganic Analytes

SAMPLE MATRIX	CONCENTRATION	FRACTION	VOLUME	CONTAINER TYPE
WATER	LOW	TOTAL METALS	1 L	C or L
		DISSOLVED METALS	1 L	C or L
		NITRITE/NITRATE	1 L	C or L
		FLUORIDE	1 L	C or L
		CYANIDE	1 L	C or L

C. Sample Containers

The following is a list of sample container types to be used during sample collection. Always use clean quality-assured sample containers. For container cleaning procedures and additional container information, refer to OSWER directive 9240.0-05, "Specifications and Guidance for Obtaining Contaminant-Free Sample Containers", April, 1990. See the tables in Part B for sample volume requirements.

Figure 11. Sample Container Types

CONTAINER TYPE	SPECIFICATIONS
A	<p>Container: 80-oz amber glass, ring handle bottle/jug, 38-mm neck finish.</p> <p>Closure: White polypropylene or black phenolic, baked polyethylene cap, 38-430 size; 0.015-mm teflon liner.</p>
B	<p>Container: 40-mL glass vial, 24-mm neck finish.</p> <p>Closure: White polypropylene or black phenolic, open-top, screw cap, 15-cm opening, 24-400 size.</p> <p>Septum: 24-mm disc of 0.005-in teflon bonded to 0.120-in silicon for total thickness of 0.125-in.</p>
C	<p>Container: 1-L high density polyethylene, cylinder-round bottle, 28-mm neck finish.</p> <p>Closure: White polyethylene cap, white ribbed, 28-410 size; F217 polyethylene liner.</p>
D	<p>Container: 120-mL wide mouth glass vial, 48-mm neck finish.</p> <p>Closure: White polyethylene cap, 48-400 size; 0.015-mm teflon liner.</p>
E	<p>Container: 16-oz. tall, wide mouth, straight-sided, flint glass jar, 63-mm neck finish.</p> <p>Closure: White polypropylene or black phenolic, baked polyethylene cap, 63-400 size; 0.015-mm teflon liner.</p>
F	<p>Container: 8-oz. short, wide mouth, straight-sided, flint glass jar, 70-mm neck finish.</p> <p>Closure: White polypropylene or black phenolic, baked polyethylene cap, 58-400 size; 0.030-mm teflon liner.</p>
G	<p>Container: 4-oz tall, wide mouth, straight-sided, flint glass jar, 48-mm neck finish.</p> <p>Closure: White polypropylene or black phenolic, baked polyethylene cap, 48-400 size; 0.015-mm teflon liner.</p>
H	<p>Container: 1-L amber, Boston round, glass bottle, 33-mm pour-out neck finish.</p> <p>Closure: White polypropylene or black phenolic, baked polyethylene cap, 33-430 size; 0.015-mm teflon liner.</p>
K	<p>Container: 4-L amber glass, ring handle bottle/jug, 38-mm neck finish.</p> <p>Closure: White polypropylene or black phenolic, baked polyethylene cap, 38-430 size; 0.015-mm teflon liner.</p>
L	<p>Container: 500-mL high-density polyethylene, cylinder-round bottle, 28-mm neck finish.</p> <p>Closure: White polypropylene cap, white ribbed, 28-410 size; F217 polyethylene liner.</p>

D. Quality Control Samples

Quality control (QC) samples are used to estimate the precision and accuracy of analytical results and to examine sources of error introduced by field and laboratory practices. The amount and type of QC samples collected varies between Regions so always refer to Regional guidance.

Assign each QC sample, except laboratory QC samples, a separate sample number and transcribe it on the TR (see Section IV: Sample Documentation). The laboratory QC sample is a special name for an existing sample required by the laboratory's contract; it is not an additional sample. Assign laboratory QC samples the same number so that the laboratory will not confuse them with the other samples for analysis. For the laboratory QC sample, label the sample containers and all copies of the paperwork as "lab QC".

Figure 12 shows some of the types of QC samples that may be collected. Follow volume requirements as specified in Part B.

E. Sample Preservation and Holding Times

Sample Preservation

Some samples must be preserved before shipment to the laboratory. In this case, preserve samples immediately upon sample collection. Preservation techniques vary among the Regions, so use the preservation information in Figure 13 as guidance for properly preserving samples. Contact your RSCC for Region-specific instructions.

Holding Time

Samples should be analyzed as soon as possible after collection. Many samples are not stable for lengthy periods following collection so daily shipment to laboratories is very important. Holding time, listed in Figure 13, is the maximum amount of time that samples may be held before analysis from time of collection and still be considered valid. Samples exceeding these holding times are not valid and must be retaken. Please note that the following are technical holding times and are not contractually determined.

Figure 12. QC Samples

SAMPLE TYPE	PURPOSE	COLLECTION	DOCUMENTATION
FIELD QC SAMPLES			
Duplicate	Check laboratory and field procedures	Collect from areas which are known or suspected to be contaminated 1 sample per week or 10% of all field samples, whichever is greater	Assign two separate sample numbers, submit blind to the lab
Field Blank	Check cross-contamination during sample collection and shipment and in the laboratory	Collect for each group of samples of a similar matrix per each day of sampling Use HPLC-grade water (carbon-free) for organics, use metal-free (deionized or distilled) water for inorganics	Assign separate sample number
VOA Trip Blank	Check contamination from field to laboratory	Collect one sample (HPLC-grade water) per each day of organics sampling	Assign separate sample number
Equipment Blank	Check field decontamination procedures	Collect when sampling equipment is decontaminated and reused in the field or when a sample collection vessel (bailer or beaker) will be used Use blank water (HPLC-grade for organics, deionized or distilled for inorganics) to rinse the equipment and pour this water into the sample containers	Assign separate sample number
LABORATORY QC SAMPLES			
Matrix Spike and Matrix Spike Duplicate	Required by laboratory's contract to check organic analyses	Collect triple volume for one water sample per twenty water samples in the first shipment for organics samples	Assign both samples the same sample number Transcribe these numbers on the TR and label them "lab QC"
Spike and Duplicate	Required by laboratory's contract to check inorganic analyses	Collect double volume for one water sample per twenty water samples in the first shipment for inorganic samples	Assign both samples the same sample number Transcribe these numbers on the TR and label them "lab QC"

Figure 13. Recommendations for Sample Preservation and Holding Times*

SPECIES TYPE	MEASUREMENT	PRESERVATIVE	HOLDING TIME
Physical Properties	Color	Cool, 4°C	48 Hrs.
	Conductance	Cool, 4°C	28 Days
	Hardness	HNO ₂ to pH<2	6 Mos.
	Odor	Cool, 4°C	24 Hrs.
	pH	None Required	Analyze Immediately
	Residue Filterable	Cool, 4°C	7 Days
	Residue Non-Filterable	Cool, 4°C	7 Days
	Residue Total	Cool, 4°C	7 Days
	Residue Volatile	Cool, 4°C	7 Days
	Settleable Matter	Cool, 4°C	48 Hrs.
	Temperature	None Required	Analyze Immediately
	Turbidity	Cool, 4°C	48 Hrs.
Metals	Dissolved	Filter on Site, HNO ₃ to pH<2	6 Mos. ¹
	Suspended	Filter on Site	6 Mos.
	Total	HNO ₃ to pH<2	6 Mos.
	Chromium ⁺⁶	Cool, 4°C	24 Hrs.
	Mercury Dissolved	Filter, HNO ₃ to pH<2	28 Days
	Mercury Total	HNO ₃ to pH<2	28 Days
Inorganics, Non-Metals	Acidity	Cool, 4°C	14 Days
	Alkalinity	Cool, 4°C	14 Days
	Bromide	None Required	28 Days
	Chloride	None Required	28 Days
	Chlorine	None Required	Analyze Immediately
	Cyanides	Cool, 4°C, NaOH to pH>12, 0.6 g ascorbic acid ³	14 Days ²
	Fluoride	None Required	28 Days
	Iodide	Cool, 4°C	24 Hrs.
	Nitrogen		
	Ammonia	Cool, 4°C, H ₂ SO ₄ to pH<2	28 Days
	Kjeldahl Total	Cool, 4°C, H ₂ SO ₄ to pH<2	28 Days
	Nitrate plus Nitrite	Cool, 4°C, H ₂ SO ₄ to pH<2	28 Days
	Nitrate ⁴	Cool, 4°C	48 Hrs.
	Nitrite	Cool, 4°C	48 Hrs.
	Dissolved Oxygen		
	Probe	None Required	Analyze Immediately
	Winkler	Fix on site and store in dark	8 Hrs.

Figure 13. Recommendations for Sample Preservation and Holding Times* Continued

SPECIES TYPE	MEASUREMENT	PRESERVATIVE	HOLDING TIME
Inorganics, Non-Metals	Phosphorus	Filter on Site	48 Hrs.
	Ortho-phosphate, Dissolved	Cool, 4°C	28 Days
	Hydrolyzable	Cool, 4°C, H ₂ SO ₄ to pH<2	28 Days
	Total	Cool, 4°C	24 Hrs.
	Total Dissolved	H ₂ SO ₄ to pH<2, Filter on Site, Cool, 4°C, H ₂ SO ₄ to pH<2	
	Silica	Cool, 4°C	28 Days
	Sulfate	Cool, 4°C	28 Days
	Sulfide	Cool, 4°C, add 2 mL Zinc acetate plus NaOH to pH>9	7 Days
	Sulfite	None Required	Analyze Immediately
Organics	VOA	HCl to pH 2, Cool, 4°C	Analyze Immediately
	BOD	Cool, 4°C	48 Hrs.
	COD	Cool, 4°C, H ₂ SO ₄ to pH<2	28 Days
	Oil & Grease	Cool, 4°C, H ₂ SO ₄ to pH<2	28 Days
	Organic Carbon	Cool, 4°C HCl or H ₂ SO ₄ to pH<2	28 Days
	Phenolics	Cool, 4°C, H ₂ SO ₄ to pH<2	28 Days
	MBAS	Cool, 4°C	48 Hrs.
	NTA	Cool, 4°C	24 Hrs.

¹Samples should be filtered immediately on-site adding a preservative for dissolved metals.

²Maximum holding time is 24 hours when sulfide is present. Optionally all samples may be tested with lead acetate paper before the pH adjustment in order to determine if sulfide is present. If sulfide is present it can be removed by the addition of cadmium nitrate powder until a negative spot test is obtained. The sample is filtered and then NaOH is added to pH 12.

³Should only be used in the presence of residual chloride.

⁴For samples from non-chlorinated drinking water supplies concentrated H₂SO₄ should be added to lower sample pH to less than 2. The sample should be analyzed within 14 days after sampling.

*Adapted from EPA-600/4-82-055 "Technical Additions to Methods for Chemical Analysis of Water and Wastes"

SECTION IV: SAMPLE DOCUMENTATION

Each sample processed by the CLP must be properly documented to ensure timely analysis of all parameters requested and to support the use of the sample data in potential enforcement actions. It is your responsibility to fill out all appropriate paperwork completely and correctly. This section provides instructions for completing all CLP forms and other sample documentation. Your Region may require additional documentation, if so, contact your RSCC for Region-specific instructions and guidance prior to the sampling activity.

A. Sample Number (RAS Programs)

The CLP sample number is a unique number that identifies each sample under a RAS analytical program. The sample number is preprinted on adhesive labels (Figures 14 and 15) and provided to you from the RSCC which routinely orders them from SMO. It is your responsibility to assign this critical sample number correctly and to transcribe it accurately on the appropriate documentation. Place the label on the appropriate sample container and transcribe the sample number onto the sample tag.

Organic and VOA-only Sample Numbers

Organic and VOA-only sample numbers are five digits in length and have the format XX123. Larger volume Regions may have six digit organic sample numbers in the format XXX123. Organic and VOA-only sample numbers are preprinted on 10 labels per strip: four for extractables, two for VOAs, and four blank (extra). DESTROY ALL UNUSED LABELS to prevent duplication of sample numbers.

Figure 14. Organic Sample Label

Inorganic Sample Numbers

Inorganic sample numbers are six digits in length and have the format MXX123. Larger volume Regions may have seven digit inorganic sample numbers in the format MXXX123. Inorganic sample numbers are preprinted on seven labels per strip: two for total metals, two for cyanide and three extra. Remember that the unique sample number must only be used for one sample. DESTROY ALL EXTRA LABELS.

JE 701 - Extractable
JE 701 - Extractable
JE 701 - Extractable
JE 701 - Extractable
JE 701 - VOA
JE 701 - VOA
JE 701
JE 701
JE 701
JE 701

Figure 15. Inorganic Sample Label

MGE 001 - Total Metals
MGE 001 - Total Metals
MGE 001 - Cyanide
MGE 001 - Cyanide
MGE 001
MGE 001
MGE 001

Use only the labels provided to the Region in which you are sampling. CLP sample numbers are alphabetically coded to correspond with each Region as follows:

Figure 16. Regional Letter Codes

REGION	LETTER CODE	
	ORGANIC	INORGANIC
I	A	MA
II	B	MB
III	C	MC
IV	D	MD
V	E	ME
VI	F	MF
VII	G	MG
VIII	H	MH
IX	Y	MY
X	J	MJ

Example: Region V Organic Sample Number = EA123
Region V Inorganic Sample Number = MEA123

B. Case Number

A Case number is assigned by SMO to RAS and RAS plus SAS samples and is five digits in length. Each sampling event receives a distinct Case number which helps maintain site confidentiality. The Case number also enables SMO and the Region to easily track RAS and RAS plus SAS samples.

Example: Case No. 10414

C. SAS Number

SAS samples are designated by a SAS number assigned by SMO. The SAS number is four numerical digits in length plus a letter suffix which indicates the Region. Like RAS Case numbers, the SAS number assists in tracking samples and maintains site confidentiality. Contact your RSCC for SAS sample labels.

Example: SAS No. 4100-E

The "E" suffix indicates that the sample has come from Region V.

Individual SAS samples are numbered using the SAS number followed by a two digit number beginning with "01".

Example: SAS No. 4100-E-01

D. RAS plus SAS Numbers

RAS Plus SAS samples receive both a Case number and a SAS number.

Example: Case No. 10458, SAS No. 4100-E

E. Traffic Report

The Traffic Report (TR) enables SMO and the Region to track samples and ensure that the samples are shipped to the appropriate contract laboratory. The TR includes a chain-of-custody record which is located at the bottom of the form. The form is used as physical evidence of sample custody. According to EPA enforcement requirements, official custody of samples must be maintained and documented from the time of collection until the time the samples are introduced as evidence in the event of litigation. You are responsible for the care and custody of the sample until sample shipment.

A sample is considered to be in your custody if any of the following criteria are met:

1. The sample is in your possession or is in your view after being in your possession,
2. The sample was in your possession and then locked up or sealed to prevent tampering, or
3. The sample is in a secured area.

Document RAS organic and inorganic samples on separate CLP sample TR forms. TR forms must be completed for every shipment of RAS samples to a contract laboratory. **Use ink only, no pencil!** Each TR documents up to 20 samples per Case number and sample shipment. A separate TR must accompany each daily shipment. Make corrections by drawing a line through and initializing the error, then enter the correct information. **Erasures are not allowed!**

When an individual sample is to be analyzed for RAS plus SAS, use the appropriate TR, organic or inorganic. Instructions summarizing CLP sample volumes, packaging and reporting requirements are printed on the back of the TRs. Check with your RSCC for RAS plus SAS required volumes.

The following is a list of step-by-step instructions for properly completing the organic and inorganic Traffic Reports. The numbers refer to specific boxes on the TR form example (Figures 17 and 18). Please follow along with the completed TR form example.

TRAFFIC REPORT FORM INSTRUCTIONS

BOX 1

Record the SAS number for RAS plus SAS samples that has been assigned to the project.

BOX 2

Record the Case number that has been assigned to the sampling event.

BOX 3

Transcribe the project code and account code assigned to the project by the RSCC. If sampling is not under Superfund, write the name of the program in the space provided, e.g., RCRA. Record the site name, city, state, and Site Spill ID (assigned by your Region).

BOX 4

Record your Region number and the name of your sampling company. Print your name and write your signature in the space following.

BOX 5

If sampling is under Superfund, place a check in the box that describes the task of the sampling mission.

ENF	-	Enforcement
ER	-	Emergency Response (Removal)
LSI	-	Listing Site Investigation
NPLD	-	National Priorities List Delete
PA	-	Preliminary Assessment
RA	-	Remedial Action
RD	-	Remedial Design
STSI	-	State Lead Site Investigation
O + M	-	Operations and Maintenance
RIFS	-	Remedial Investigation Feasibility Study
SSI	-	Screening Site Investigation
ST	-	State Lead
STPA	-	State Lead Assessment
Other	-	Please Specify

BOX 6

Record the date shipped, the carrier name (e.g., Federal Express, Purolator, Emery, or Airborne) and the airbill number.

BOX 7

Record the name and full address of the contract laboratory. Enter the name of the sample custodian or CLP contact.

BOX 8

Carefully transcribe the CLP sample number from the preprinted sample labels.

BOX 9	Record the appropriate sample description code from the choices listed in number 7 on the form.
BOX 10	Enter the estimated sample concentration level: "L" for low concentration, "M" for medium concentration, and "H" for high concentration.
BOX 11	Enter the sample type, composite or grab.
BOX 12	Record the type of preservative used (i.e., HCl, NaOH, HNO ₃ , H ₂ SO ₄) from number 6 on the form.
BOX 13	Check the analytical fractions requested for each sample, for example, VOAs, SVs, and pesticides/Aroclors are for organics, total metals, and cyanide are for inorganics. Note: Either total or dissolved metals can be requested for each individual inorganic sample, but not both analyses.
BOX 14	Transcribe the Regional-specific tracking number or tag number designated by the RSCC.
BOX 15	Enter the station location number.
BOX 16	Record the month, day, year, and time, in military style (e.g., 1600 hours = 4:00 p.m.), of sample collection.
BOX 17	Enter your initials.
BOX 18	Enter the corresponding organic or inorganic CLP sample number, if applicable.
BOX 19	Place a Y or N to indicate if the TR is the final for a complete Case.
BOX 20	Sign and date the completed form. Record the time the form was completed.

After you have properly completed the TR, send the pink copy to SMO, and enclose the white and yellow copies with the sample for receipt at the laboratory. Send the blue (for organic TR) and the green copy (for inorganic TR) to your RSCC.

22

1. Вводная часть

F. Sample Tag

The sample tag identifies each sample removed from a hazardous waste site and transferred to a laboratory for analysis. Place a sample tag on each sample container. Check with your RSCC to obtain sample tags as sample tags differ between Regions.

SAMPLE TAG INSTRUCTIONS

- BOX 1** Under the "Remarks" heading, enter the CLP Case and/or SAS Number and record the CLP sample number.
- BOX 2** Record the Project Code assigned by EPA.
- BOX 3** Enter the Station Number assigned by the sampling team coordinator.
- BOX 4** Record the date to indicate the month, day, and year of sample collection.
- BOX 5** Enter the military time of sample collection, i.e., 13:01 = 1:01 p.m.
- BOX 6** Place a check to indicate composite or grab sample.
- BOX 7** Record the station location (description) as specified in the project plan.
- BOX 8** Sign the sample tag with your name.
- BOX 9** Place a check next to "yes" or "no" to indicate if a preservative was added.
- BOX 10** Under "analyses," place a check next to the parameters for which the sample is to be analyzed. Note: Do not write in the box for "laboratory sample number."

Figure 19. Sample Tag

Project Code <i>21.5M10.0</i>		Station No. <i>26</i>		Mo./Day/Year <i>5/18/90</i>		Time <i>10:01</i>		Designate: Comp. <input type="checkbox"/> Grab <input checked="" type="checkbox"/>													
Tag No. <i>7712</i>	Station Location <i>MONITORING WELL #26 SPLIT SPOON #11</i>			Sampler's (Signatures) <i>John Jones</i>																	
	Remarks: <i>CASE NO. 1746 SAMPLE NO. 17K301</i>			<table border="1"> <tr> <td colspan="6">ANALYSES</td> <td rowspan="2">Preservative: Y <input type="checkbox"/> N <input checked="" type="checkbox"/></td> </tr> <tr> <td>BOD Ammonia Solids (TSS) (TDS) (SS)</td> <td>COD, TOC, Nutrients</td> <td>Phenolics</td> <td>Metals</td> <td>Cyanide</td> <td><input checked="" type="checkbox"/></td> </tr> </table>						ANALYSES						Preservative: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	BOD Ammonia Solids (TSS) (TDS) (SS)	COD, TOC, Nutrients	Phenolics	Metals	Cyanide
ANALYSES						Preservative: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>															
BOD Ammonia Solids (TSS) (TDS) (SS)	COD, TOC, Nutrients	Phenolics	Metals	Cyanide	<input checked="" type="checkbox"/>																
Lab. Sample No.	<table border="1"> <tr> <td>ABN</td> <td>VOA organics</td> <td>Pesticides</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>									ABN	VOA organics	Pesticides									
ABN	VOA organics	Pesticides																			

G. SAS Packing List

The SAS Packing List (PL), a four part carbonless form, is used only for "All SAS" samples. Up to twenty samples may be listed on this form. A separate SAS PL must accompany each day's shipment.

Number individual SAS samples by using the SAS number followed by a hyphen and progressive numerical designation starting with 1 (e.g., 2000-E-01, 2000-E-02, 2000-E-03). If more than one PL is utilized, take care not to repeat sample numbers.

Use the PL example when filling out the form.

SAS PACKING LIST INSTRUCTIONS

- | | |
|--------------|--|
| BOX 1 | Print the SAS Number assigned by SMO. |
| BOX 2 | Write the name of your sampling office and your name and phone number. |
| BOX 3 | Record the date that you took the samples, the date that you shipped the samples, and the site name/code. |
| BOX 4 | Print the name of the analysis laboratory that you shipped the samples to and the name of the sample custodian. |
| BOX 5 | Under "sample numbers," record the individual SAS sample numbers listed in increasing numerical order, e.g., 2413-F-01, 2413-F-02, 2413-F-03, etc. |
| BOX 6 | Describe the sample concentration, matrix, and parameters for which the sample will be analyzed. Include the sample description/location assigned to each individual sample. |

After completing the PL, include the two bottom copies (pink and gold) with the sample shipment to the laboratory. After the samples have been shipped, send the top copy (white) to SMO and the second copy (yellow) to your RSCC. Please note that some Regions require that SMO's copy be sent to the RSCC. Check with your RSCC before distributing the PL.

Figure 20. SAS Packing List

U.S. ENVIRONMENTAL PROTECTION AGENCY
CLP Sample Management Office
P.O. Box 818, Alexandria, Virginia 22313
Phone: 703/557-2490 - FTS/557-2490

SAS Number
2413-F 1

SPECIAL ANALYTICAL SERVICE
PACKING LIST

Sampling Office VI DALLAS 2	Sampling Date(s) 8/7/90 3	Ship To ROCKY MOUNTAIN ANALYTICAL 3330 MARSHALL ST ARVADA, CO 80002 4	For Lab Use Only
Sampling Contact ART WELER	Date Shipped 8/8/90	Attn TONY SMITH	Date Samples Rec'd
Phone 214-555-1212	Site Name/Code EZI		Received by

Sample Numbers	Sample Description i.e., Analysis, Matrix, Concentration	Sample Condition on Receipt at Lab
1. SAS 2413-F-01	ESXBPO01, MED SOIL, A, B	
2. SAS 2413-F-02	ESXBPO02, MED SOIL, A	
3. SAS 2413-F-03	ESXBPO03, LOW WATER, A	
4. SAS 2413-F-04	ESXBPO04, LOW WATER, B	
5. SAS 2413-F-05	ESXBPO05, MED WATER, B	
6. SAS 2413-F-06	ESXBPO06, LOW SOIL, A	
7.		
8.		
9. 5	6	.
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		

**A - HEXAVALENT
CHROMIUM**

For Lab Use Only
B - BP TOXICITY

WHITE - SMO Copy

YELLOW - Region Copy


PINK - Lab Copy for return to SMO

GOLD - Lab Copy

H. Custody Seal

For potential litigation purposes, you must sign and date the custody seal. The custody seal is used to seal the lids on sample containers before placement into the cooler. Custody seals are also placed across the cooler opening after the cooler has been properly secured. Note: the space for "sample no." does not need to be filled out on custody seals placed across the cooler opening. An example of a signed custody seal is shown below.

Figure 21. Custody Seal

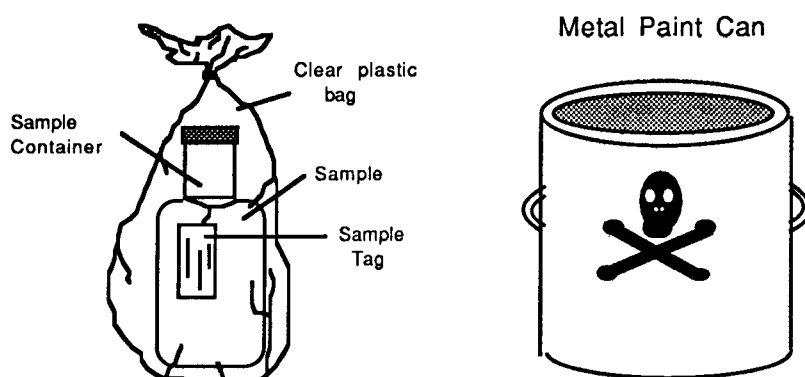
 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY OFFICIAL SAMPLE SEAL	SAMPLE NO.	<i>MHR 501</i>	DATE	<i>5/18/90</i>	SEAL BROKEN BY	DATE
	SIGNATURE	<i>John Jones</i>				
	PRINT NAME AND TITLE	<i>JOHN JONES TECHNICIAN</i>				

SECTION V: SAMPLE PACKAGING AND SHIPPING

A. Sample Packaging

- Follow all state and federal regulations governing hazardous environmental sample packaging and shipment.
- Use waterproof metal or hard plastic ice chests or coolers for shipping samples. Line the cooler with plastic before inserting samples.
- Enclose sample containers in clear plastic bags inside the cooler. Make sure that sample tags and labels are visible.
- Inorganic samples and VOA water samples may require chemical preservation. Refer to Section III: Sample Preservation for these techniques before packaging.
- Any samples suspected to be of medium/high concentration or containing dioxin must be enclosed in a metal can with a clipped or sealable lid (e.g., paint cans). Label the outer metal container with the sample number of the sample inside.
- “Double bag” sample containers which do not fit into paint cans before placing them in the cooler.

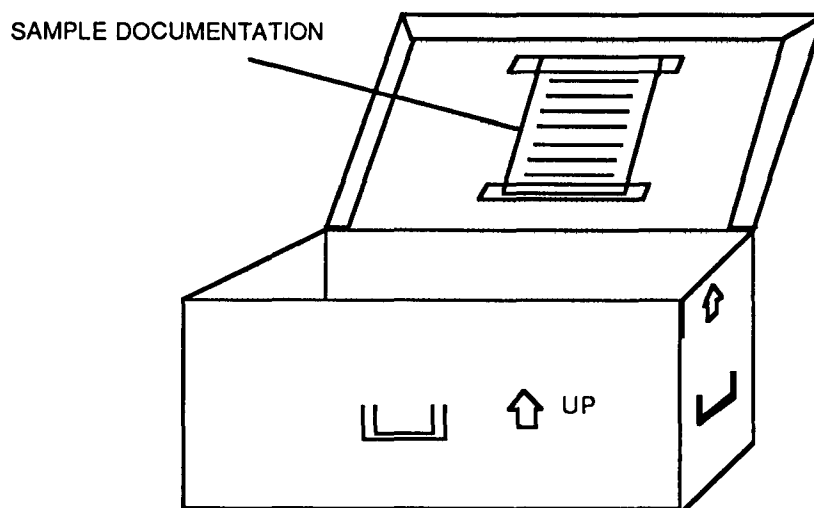
Figure 22. Sample Packaging



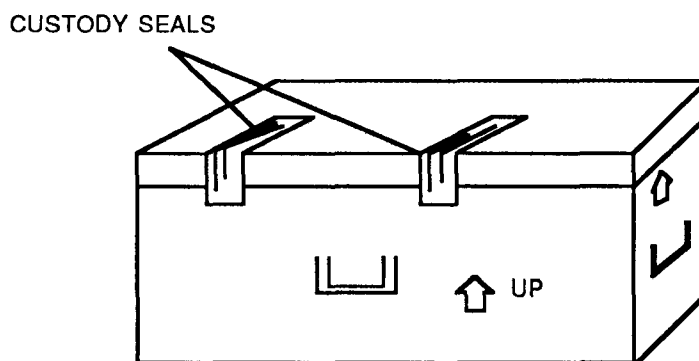
- Pack shipping containers with noncombustible, absorbent packing material such as vermiculite. Place this packing material around the sample bottles or metal cans to avoid breakage during shipment. Never use earth or ice to pack samples as earth is a contaminant and ice melts which may cause complications.
- Cool water samples for low/medium organic analysis and low/medium level metals and cyanide analysis to 4° C with ice or "blue ice" when shipping. Seal the ice in plastic bags to prevent melting ice from soaking the packing material.

- Write a return name and address for the sample cooler on the inside of the lid in permanent ink to ensure the return of the cooler.
- Enclose all sample documentation (i.e., TRs, SAS PLs, Chain-of-Custody Records) in a waterproof plastic bag and tape the bag to the underside of the cooler lid. If more than one cooler is being used, place all documentation in one cooler.

Figure 23. Sample Cooler

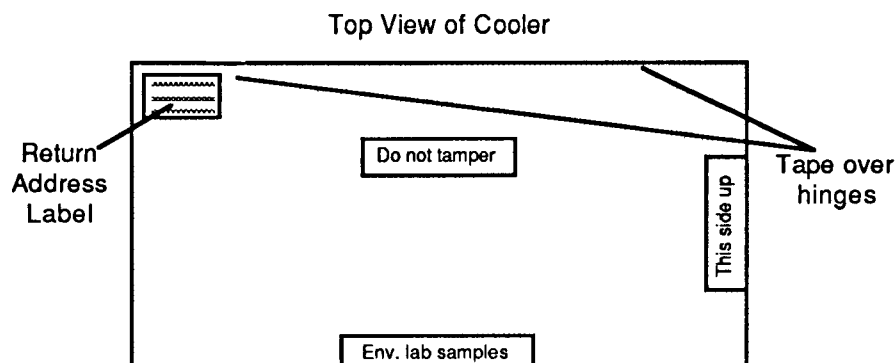


- Seal coolers with custody seals so that if the cooler was opened, the custody seal would be broken. Place clear tape over the custody seal to prevent damage to the seal. Also, tape the cooler shut with packing tape over the hinges and place tape over the cooler drain.



B. Sample Shipping

- Place return address labels clearly on the outside of the cooler.
- Ship samples through a commercial carrier, such as Federal Express, Emery, Purolator or equivalent.
- Fill out all required Government and commercial carrier shipping papers according to U.S. Department of Transportation and commercial carrier regulations.
- Ship all samples by overnight delivery.



C. Potential Sampling Problems

Sometimes problems may arise during sampling from improper sampling practices or other reasons. Some of these problems are shown in the following list.

- Filling out paperwork incorrectly or incompletely
- Collecting less than the required sample volume
- Shipping samples to the wrong laboratory
- Collecting matrices other than water or soil/sediment (i.e., rocks, leaves, sticks, etc.)
- Using incorrect sample containers
- Leaking sample containers
- Equipment malfunctions
- Severe weather conditions

These problems may delay sample analysis. If any of these problems occur, contact your RSCC or SMO immediately for instructions on how to deal with the problem.

D. Reporting Sample Shipment

Notify your RSCC or SMO, as directed, of all sample shipments on the day of shipment. This notification enables SMO to track the shipment of samples from the field to the laboratory and ensure timely laboratory receipt of samples. Contact SMO (703/557-2490) with the following information:

- Your name, phone number and Region.
- Case number and/or SAS number of the project.
- Batch numbers (dioxin only).
- Exact number(s), matrix(ces) and concentration(s) of samples shipped.
- Laboratory(ies) to which samples were shipped.
- Carrier name and airbill number(s) for the shipment.
- Method of shipment (e.g., overnight).
- Date of shipment.
- Suspected contaminants associated with the samples or site.
- Information on completions, changes, delays, continuations, etc., pertinent to the Case and sampling project.

Sample shipments made after 5:00 p.m. EST should be called in to SMO at the start of business the next day (8:00 a.m. EST). You must notify SMO by 3:00 p.m. EST Friday for sample shipments that will be delivered on Saturday.

SECTION VI: COMMUNICATION NETWORK

You have two primary contacts for information or aid regarding sampling. The first contact is the Region's Primary Regional Sample Control Center (RSCC) and the second contact is the SMO Regional Coordinator. These two individuals will answer any questions and advise you as to the best way to resolve problems in the field.

Figures 24 and 25 give names, addresses, and telephone numbers of Regional Primary RSCCs and SMO Regional Coordinators. Contact only the Region to which you have been assigned. Note that these individuals are subject to change.

Figure 24. RSCC Addresses

Regional Sample Control Centers	Primary RSCCs
USEPA Region I, WMD J.F. Kennedy Federal Bldg. Boston, MA 02203	Heidi Ellis 617/573-5798 FTS 833-1798
USEPA Region II, ESD Woodbridge Ave. Bldg. 209 Edison, NJ 08837	Philip Guarraia 201/321-6997 FTS 340-6997
USEPA Region III, CRL 839 Bestgate Rd. Annapolis, MD 21401	Colleen Walling 301/266-9180
USEPA Region IV, ESD Env. Compliance Branch College Station Road Athens, GA 30613	Bill Bokey 404/546-3300 FTS 250-3300
USEPA Region V, ESD 536 S. Clark St. Tenth Floor, CRL Chicago, IL 60605	Jan Pels 312/353-2720 FTS 353-2720
USEPA Region VI Monterey Park Pl. Bldg. C 6608 Hornwood Dr. Houston, TX 77074	Myra Perez 713/953-3425 FTS 526-9425
USEPA Region VII, ESD 25 Funston Rd. Kansas City, KS 66115	Nicole Roblez 913/236-3881 FTS 757-3881
USEPA Region VIII 999-18th St. 12th Floor Denver, CO 80202	Tammy Kozak 303/294-7507 FTS 330-7507
USEPA Region IX, OPM 215 Fremont St. San Francisco, CA 94105	Robbie Hedeon 415/744-1244
USEPA Region X, ESD 1200 Sixth Ave. E/S 095 Seattle, WA 98101	Carolyn Wilson 206/442-1632 FTS 399-1632

Figure 25. SMO Regional Coordinators

CLP Sample Management Office
P.O. Box 818
Alexandria, VA 22313
703/557-2490
FTS 557-2490

Region	Coordinator ¹	Analyst ²
Region I	Vikki Denslow	Terri Shaughnessy
Region II	Bret Elder	Diane Cutler
Region III	Elenor McLean	Diane Cutler
Region IV	Tom Sigler	Terri Shaughnessy
Region V	Loren Minnich - SAS Blake Henke - RAS	Terri Shaughnessy
Region VI	Elenor McLean	Terri Shaughnessy
Region VII	David Mack	Diane Cutler
Region VIII	Monica McNeil	Diane Cutler
Region IX	Susan Grove	Diane Cutler
Region X	David Mack	Terri Shaughnessy

¹Coordinator assignments are subject to change. Please consult with the appropriate analyst for the current status.

²The SMO Environmental Program Analysts provide additional CLP support for the ten EPA Regions with regard to SMO/Regional operations. The analysts oversee all SMO/Regional interactions and serve as secondary communication contacts for the SMO Regional coordinators.

GLOSSARY

AOB -	Analytical Operations Branch (AOB) of the USEPA which runs the National Program Office and directs the Contract Laboratory Program.
Aliquot -	A measured portion of a sample taken for analysis. One or more aliquots make up a sample.
Case -	A finite, usually predetermined number of samples collected over a given time period from a particular site. A Case consists of one or more Sample Delivery Groups.
Case number -	Assigned to RAS samples by SMO for tracking purposes.
Concentration -	Defined as high, medium, or low to determine how much volume is collected or the analytical protocol to be followed.
Extractable -	An organic compound that is extracted from a sample by an organic solvent prior to analysis.
Fraction -	A specific subunit of an analytical protocol. For example, for full organics the fractions are VOAs, SVs, and pesticides/Aroclors.
Holding Time -	The maximum amount of time a sample may be stored before analysis.
Matrix -	The principal material of which the sample is composed, usually water or soil/sediment for RAS samples.
NPO -	National Program Office (NPO) directs the activities of the CLP.
PL -	SAS Packing List (PL) is used to track SAS samples.
Preservative -	A chemical added to inorganic and volatile water samples to maintain the integrity of the sample. Some common preservatives include nitric acid, hydrochloric acid, and sodium hydroxide.
RAS -	Routine Analytical Services (RAS) are performed by laboratories that have been awarded CLP Government contracts.
RSCC -	Regional Sample Control Center (RSCC) coordinates Regional sampling efforts.
Sample -	A material to be analyzed that is contained in single or multiple containers and made up of all of the aliquots identified by the same sample number.

Sample container -	The individual bottle which contains the sample or an aliquot of the sample. The type of sample container varies for different sample fractions and concentrations.
Sample label -	Adhesive labels distributed by the RSCC that provide the sample numbers to be assigned to the samples.
Sample number -	The number from the sample label that identifies the sample or an aliquot of the sample. Sample numbers are six digits in length for inorganic field samples and five digits in length for organic field samples.
Sample Delivery Group -	<p>The Sample Delivery Group (SDG) is a unit within a case that is used to identify a group of samples for delivery. An SDG is defined as one of the following, whichever comes first:</p> <ul style="list-style-type: none"> • a Case, or • 20 field samples within a Case, or • a specified period of time in which field samples in a Case are received at a laboratory, beginning with receipt of the first sample in the Case or SDG.
SAS -	Special Analytical Services (SAS) are performed for samples with a faster turnaround time, unusual matrices, or special analytical methods. SAS are subcontracts through EPA's SMO contractor that are arranged to meet the needs of the Regions.
SAS number -	A number assigned by SMO that identifies the SAS project. The SAS number is four numerical digits in length plus a letter suffix to indicate the Region.
SMO -	Sample Management Office (SMO) provides management, operations, and administrative support to the CLP. SMO schedules sample shipment for RAS and SAS requests.
TPO -	The Regional Technical Project Officer (TPO) monitors the activities of the contract laboratories located in his/her Region.
TR -	Traffic Report (TR), a sample identification form filled out by the sampler to assist in tracking RAS samples.
Volume -	The amount of sample collected. Volume requirements differ between RAS programs, matrices, fractions, and concentrations.