

ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF ENFORCEMENT

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*NEIC POLICIES  
AND  
PROCEDURES MANUAL*

NATIONAL ENFORCEMENT INVESTIGATIONS CENTER

DENVER, COLORADO

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Environmental Protection Agency  
Office of Enforcement

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NEIC POLICIES AND PROCEDURES MANUAL

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National Enforcement Investigations Center

Denver, Colorado

## TRANSMITTAL RECORD

NEIC Policies and Procedures Manual

[illegible]

## FOREWORD

As part of the Environmental Protection Agency, the National Enforcement Investigations Center provides the Office of Enforcement with technical information and evidence in support of EPA legal actions. For this reason, the legally oriented standard operating procedures described in this manual are important to every employee.

This manual discusses NEIC project phases, then presents policies and procedures which employees are responsible for knowing and following. Should employees be called to testify as government witnesses, they must be able to relate the facts acquired during field and laboratory investigations in a truthful, confident, and straightforward manner; helpful Witness Guidelines are appended to this manual. By adhering to the Center's policies and procedures, employees protect both their professional careers and the integrity of NEIC.

## CONTENTS

I	NEIC PROJECT PHASES	I-1
	INTRODUCTION	I-1
	PROJECT REQUEST	I-2
	BACKGROUND REVIEW	I-5
	PROJECT PLAN	I-6
	FOLLOWUP	I-8
	PROJECT ACTIVITIES	I-9
	REPORT	I-10
II	NEIC OPERATING POLICIES AND PROCEDURES	II-1
	EMPLOYEE CONDUCT	II-1
	ENTERING A FACILITY	II-2
	REQUESTING INFORMATION	II-5
	DISCLOSURE OF OFFICIAL INFORMATION	II-6
	PROJECT COORDINATOR RESPONSIBILITIES	
	AND AUTHORITY	II-7
	PROJECT PLAN	II-7
	ADMINISTRATIVE MATTERS	II-8
	FIELD ACTIVITIES	II-9
	REPORT WRITING	II-10
	SAMPLE CONTROL	II-11
	SAMPLE IDENTIFICATION	II-11
	CHAIN-OF-CUSTODY PROCEDURES	II-14
	DOCUMENT CONTROL	II-21
	SERIALIZED DOCUMENTS	II-21
	PROJECT LOGBOOKS	II-22
	FIELD DATA RECORDS	II-23
	SAMPLE IDENTIFICATION DOCUMENTS	II-23
	CHAIN-OF-CUSTODY RECORDS	II-24
	OTHER CONTROLLED DOCUMENTS	II-24
	PHOTOGRAPHS	II-26
	CORRECTIONS TO DOCUMENTATION	II-26
	CONSISTENCY OF DOCUMENTATION	II-27
	DOCUMENT NUMBERING SYSTEM AND INVENTORY PROCEDURE	II-27
	BRANCH FILES	II-28
	EVIDENTIARY FILE	II-28
	REPORTS	II-29
	LITIGATION DOCUMENTS	II-30
	CONFIDENTIAL INFORMATION	II-30
	QUALITY ASSURANCE MANAGEMENT	II-31
	ORGANIZATIONAL RESPONSIBILITY	II-31
	MEASUREMENT METHODS	II-31
	TRAINING	II-32
	DATA REVIEW	II-33
	INDEPENDENT AUDIT	II-33
	DEFINITIONS	II-33

## APPENDICES

- A Witness Guidelines
- B Procedures for Air Shipment of  
Environmental Laboratory Samples
- C Safety Precautions When Accepting  
Samples From Outside Sources

## FIGURES

- 1 Sample Tags II-12
- 2 Chain-of-Custody Records (Water, Air) II-16, 17

## I. NEIC PROJECT PHASES

### INTRODUCTION

The projects undertaken by NEIC span a wide variety of activities, from one employee performing technical, supportive or administrative tasks, to numerous employees from divergent disciplines working as a team to accomplish a series of complex tasks. Most of the Center's projects consist of these phases.

- Project Request
- Background Review
- Project Plan
- Project Activities
- Report
- Followup

This section of the manual discusses the items covered in each phase which are common to most projects, and outlines NEIC policies pertinent to each phase.

## PROJECT REQUEST

All NEIC projects are preceded by requests to the Director or the Assistant Director for Technical Programs for work to be performed. Many requests received by NEIC for technical assistance, involve projects which require extensive field work on pollution problems in more than one medium. Others include, for example, a technical and/or legal review of an abatement proposal, or analytical support for a Regional enforcement case.

The content of the project request is essential to the success of the project. To assure that NEIC is as responsive as possible, it will consider informal requests from sources within the Agency. However, the official requester must followup with a specific written request detailing the objectives, relating those objectives to an enforcement action, and identifying the requester's contact. A written, in addition to a verbal, request ensures NEIC of administrative accountability and clarity of project definition, as well as allowing management to adequately coordinate and schedule the Center's workload.

Official requests for technical assistance will be received only from the following:

Administrator  
Deputy Administrator  
Assistant Administrator for Enforcement  
Deputy Assistant Administrators } ----in the Office of Enforcement  
Headquarters Division Directors }  
Department of Justice, Headquarters ----with the knowledge and concurrence of the Asst. Administrator for Enforcement

Regional Administrators	
Deputy Regional Administrators	
Regional Enforcement Division Directors	
Other Regional Division Directors	} --- with the knowledge and concurrence of the Regional Enforcement Division Director
U.S. Attorney's Offices	
State and Local Program Directors	

Receipt of an official request will be acknowledged by NEIC and the acceptance will include a tentative schedule for completing the work. The acceptance usually sent to the requester before any work begins, designates specific NEIC employees as contacts for technical work and legal coordination, and seeks access to all files related to the work. In some cases, for example, requests for technical support or review of an abatement proposal, the acknowledgement memorandum can provide a sufficient outline of work activity.

To accomplish the objectives of a request efficiently and effectively, a Project Coordinator is usually named. The selection of this individual is generally determined by the type investigation or assistance requested, such as. a multi-media evaluation with or without sampling; case preparation; performance audit; pesticide use investigation; or control technology assessment. In some instances, a technical assistance request may involve only one individual--- for example, a detailed control technology assessment; or it may involve only analytical support---such as pesticide analyses for Regional investigations; or it may require support from several Branches within NEIC.

When the technical assistance for a project is confined to one Branch, the Branch Chief designates the coordinator. In those cases where more than one Branch is involved, the Assistant Director for Technical Programs, after consultation with the Deputy Assistant Directors, will issue a memorandum designating the Coordinator. The

individual selected will have demonstrated through past performance as Project Coordinator, or as an assistant, the ability to perform the extensive administrative and field responsibilities of the Project Coordinator (as described in Section II).

## BACKGROUND REVIEW

Review of the available background information applicable to a specific project is a logical and essential first step in providing technical assistance. Scope and duration of the background review varies with the complexity of the project request. Background information is available at the Center through the in-house and affiliated libraries and the NEIC computerized data retrieval systems. However, for many projects it will be necessary to make visits to EPA headquarters, Regional offices and/or State and local agencies to review and obtain copies of pertinent files. Where necessary, a reconnaissance of the project site provides background verification or updating. Examples of information obtained during a background review include: the applicable laws and regulations, the status of current and pending litigation related to the project, Regional Office legal strategy and how the NEIC study relates to the strategy, specific descriptions of related process and pollution control systems, copies of relevant source permits and compliance schedules, past self-monitoring data, prior government or facility studies, and availability of established analytical methods.

The primary purpose of a review is to familiarize NEIC personnel with the background of the work request and its legal ramifications so that a comprehensive project plan can be developed. Moreover, information obtained during the review will often be used during project performance and report preparation. Therefore, it is important to conduct as thorough a review as possible early in the project development. The background review may even continue throughout the project to obtain needed information.

## PROJECT PLAN

A general project outline is included with the NEIC acceptance of an official request. After sufficient background information has been obtained and evaluated, a comprehensive project plan is usually prepared based on the specific objectives and tasks in the project request. For projects that are small in scope, the acceptance memorandum may serve as the project plan. Projects such as complex pollution control evaluations, NPDES permit compliance evaluations, air pollution source surveys, ambient air and/or receiving water quality surveys, pesticide use investigations, and solid/hazardous waste disposal evaluations normally require a detailed project plan.

The Project Coordinator prepares the project plan detailing the project's scope, logistics and schedules. Items addressed in the project plan are:

1. Objectives
2. Background information, including a summary of process(es), applicable regulations or permit conditions, etc.
3. Survey methods, including sampling locations, schedules and procedures, analytical requirements, quality control program, etc.
4. Process data to be collected
5. Personnel and equipment requirements
6. Safety program and equipment
7. Custody procedures
8. Report schedules
9. Followup plans (when necessary)

The Project Coordinator works closely with the appropriate NEIC staff to determine items such as equipment and logistical requirements,

analytical capabilities, and personnel availability. The Project Coordinator also communicates with the requester or designated representative to ensure that the plan being developed addresses the tasks requested and focuses on the objectives.

The importance of the project plan cannot be overemphasized. The plan approximates an agreement between the requesting party and those individuals performing the work. Manpower, equipment needs and logistics can be forecast and scheduled. Additional equipment, contract services, or personnel can be secured expeditiously with the advance determination of needs.

The project plan should be provided by NEIC to the requester and the survey team at least two weeks before any specific field, laboratory, or consultant activity is undertaken. If no comments on the plan are received from the requester during this period, it is assumed that the plan is acceptable. Changes made to the project plan will be coordinated with the requester by the Assistant Director for Technical Programs. If considered necessary, a meeting will be held between the appropriate NEIC personnel and the requester to discuss any differences and modifications. Once all concerned parties agree to the project plan, it serves as a reference document for the project.

However, during the conduct of the project, some modifications to the plan may be deemed necessary by NEIC personnel when unforeseen circumstances arise.\* If the requester desires changes in the project plan after the project activities have commenced, such requests will be directed to the Assistant Director for Technical Programs. Each request will be discussed with the appropriate management and supervisory staff and with the project coordinator. Agreed upon changes will be detailed in a memorandum to the Assistant Director.

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\* The plan will contain a statement that it is subject to change.

## FOLLOWUP

Because the majority of NEIC investigative activities are associated with potential enforcement actions, all project plans, reports, and related litigation documents will be transmitted by the Chief of the Enforcement Specialist Office.

Completion and transmittal of the project report do not necessarily signify the end of NEIC's involvement with the project. Continuing involvement may include technical consultation on monitoring programs and remedial measures. NEIC personnel will continue to followup project involvement in subsequent legal proceedings. In such cases, NEIC personnel may be involved in enforcement cases preparation and serve as, or be deposed as, witnesses [Appendix A gives Witness guidelines for preparing testimony as an expert witness]. Other reports may affect EPA policies or serve as forerunners for additional enforcement studies

## PROJECT ACTIVITIES

Technical duties such as legal and technical information searches, inspections, evaluations, sampling surveys, observations, data gathering and analytical testing are performed by the applicable established procedures. When new methods or modifications to existing procedures are required, they must be documented as expeditiously as possible. Because of the close scrutiny that may be given to NEIC-gathered data during litigation, all samples are maintained under chain-of-custody procedures and accounted for by a document control program. To ensure that all procedures practiced at NEIC yield accurate data, these procedures are audited routinely through a quality assurance management program. (See Section II for procedures and programs )

## REPORT

The final report details the results of the project efforts, and it can be the requester's basis for enforcement actions. Because the report may be introduced as evidence in legal proceedings, it must be accurate and legally defensible.

The overall responsibility for preparing the final report is that of the Project Coordinator, who, along with the management of NEIC, bears the burden for the accuracy and defensibility of the report and its conclusions. Achieving this goal, however, requires that each Branch participating in the project assure that its individual contributions to the report are accurate.

The form of the final report will vary with the type and complexity of the project. Some projects can be presented adequately in a memorandum, while other more complex projects will require extensive data and information presentation and discussion.

A color code has been adopted for all bound reports prepared at NEIC. A black cover is reserved for a report specifically targeted for enforcement case preparation. A red cover indicates a professional paper, special project, or technical information compilation not directly related to enforcement action. A blue cover is used for remote sensing reports. The green cover is used for unique types of publications, such as the NEIC Safety Manual. All other miscellaneous reports have tan covers. All white-cover reports are draft copies of the above categories. Specific details for document control procedures related to draft copies of reports are covered in Section II.

The NEIC library maintains a set of the Center's bound reports for reference use. Most reports are also available either as microfiche or paper copy from the library supply. Other short-form reports are available in the various Branch files, as well as the Evidentiary File (described in Section II). Each employee is encouraged to become familiar with the various forms of NEIC reports. Public disclosure of NEIC records will be made to the fullest extent possible. External distribution of reports supporting pending enforcement actions must be authorized through the Chief, Enforcement Specialist Office. Extra copies of pending case reports will be maintained in a secure area of the library. Report distribution restrictions terminate upon resolution of the case. However, a report distribution log is maintained and the appropriate Regional Office may subsequently determine to whom a report has been released.

Distribution restrictions also apply to reports that contain information for which a confidentiality claim has been asserted. Each copy of the report will carry a notation that it contains confidential information. All reports containing confidential information will be kept in secure areas until a final determination removes the restrictions. These reports are not available in the library. Questions concerning restricted report availability should be directed to the Enforcement Specialist Office.

Copies of all NEIC bound reports that have been cleared for public distribution are sent to the National Technical Information Service (NTIS). Their availability to the public is then announced through the NTIS publication, Government Reports Announcements. They will be reproduced and distributed for a fee and will be offered in either paper or microfiche form.

## II NEIC OPERATING POLICIES AND PROCEDURES

### EMPLOYEE CONDUCT

EPA employees are required to perform their duties in a professional and responsible manner, refraining from any use of official position for private gain. NEIC employees are also required to collect and report the facts of an investigation completely, accurately and objectively. They must also conduct themselves at all times in accordance with the regulations prescribed in the EPA handbook, RESPONSIBILITIES AND CONDUCT FOR EPA EMPLOYEES. The following four paragraphs review some topics in the handbook especially applicable to NEIC work.

Employees shall avoid conflicts of interest through outside employment or other private interests. A conflict of interest may exist whenever an EPA employee has a personal or private interest in a matter which is related to his official duties and responsibilities. It is important to avoid even the appearance of a conflict of interest because the appearance of a conflict damages the integrity of the Agency and its employees in the eyes of the public. All employees must, therefore, avoid situations which are, or give the appearance of, conflicts of interest when dealing with others in or outside the government.

Good public relations and common sense dictate that employees dress appropriately and with proper safety equipment for the activity in which engaged. When in the laboratory, field, or industrial facility, employees should consult their supervisor and the NEIC SAFETY MANUAL relative to proper attire and safety requirements

It is important that cooperation be obtained and good working relations established when working with the public. This can best be accomplished by using diplomacy, tact, and persuasion. Employees should not speak of any person, other regulatory agency or facility in a derogatory manner, and should use discretion when asked to give a professional opinion on specific products or projects. All information acquired during an employee's duties is for official use only.

An employee is forbidden to solicit or accept any gift, gratuity, entertainment, favors, loans, or any other thing of monetary value from any person, corporation, or group which has a contractual or financial relationship with EPA, which has interests that may be substantially affected by such employee's official actions, or which conducts operations regulated by EPA. Responsibility for individual actions rests with the employee where circumstances make it inappropriate to decline a nominally valued gratuity, such as lunch in a company cafeteria where no payment mechanism is provided.

### ENTERING A FACILITY

#### Authority

Various Federal environmental statutes grant EPA enforcement personnel authority to enter and inspect facilities. The authority granted in each statute is similar to that stated below, in Section 308 of the Clean Water Act.

"(a)(B) the Administrator or his authorized representative, upon presentation of his credentials -  
(i) shall have a right of entry to, upon, or through any premises in which an effluent source is located or in which any records required to be maintained . . . are located, and  
(ii) may at reasonable times have access to and copy any records, inspect any monitoring equipment or method required and sample any effluents which the owner or operator of such source is required to sample . . . ."

For the specific requirements on conducting inspections and collecting data pursuant to other particular Acts, see: Section 114 of the Clean Air Act; Sections 8 and 9 of the Federal Insecticide, Fungicide, and Rodenticide Act; Section 3007 of the Resource Conservation and Recovery Act; Sections 8 and 11 of the Toxic Substances Control Act; and Section 1445 of the Safe Drinking Water Act.

#### Unreasonable Search and Seizure

EPA authority under the various Acts is subject to the "unreasonable search and seizure" provisions of the Fourth Amendment to the Constitution. It prohibits all searches and seizures which are unreasonable or to which required consent has not been given. While a consensual entry may not be necessary for entering a public area or for acting under emergency conditions, no forcible entry is permitted without due process of law when entry has been denied. Consent, in this context, means the intentional foregoing of right to privacy which is not the result of either fear, ignorance or trickery.

When obtaining consent to enter, do not suggest that civil or criminal consequences will result from entry denial. If the element of surprise is critical to the inspection or prior behavior indicates that entry will be denied, the Enforcement Specialist Office should be notified before the inspection is attempted.

Consent to enter may be revoked by a facility prior to the completion of an inspection. If that should occur, all work performed during the consensual entry should remain in the possession of the inspection team. When a withdrawal of consent occurs, the inspection team shall leave the area and follow the procedures for denial of entry as detailed below.

To comply with the Acts and avoid any "unreasonable search" and procedural problems, a facility should be entered in the following manner.

1. The plant premises should be entered through the main gate or through the entrance designated by the source if in response to an inspection notification letter.

2. The employee should introduce himself in a dignified, courteous manner to a responsible plant official and briefly describe the purpose of the visit. Identification credentials should always be shown. A responsible plant official may be the owner, operator, officer or agent in charge for the facility, including the plant environmental engineer.

3. If there is only a guard present at the entrance, the employee should present his credentials and suggest that the guard call his superior on the phone. The inspector may request that the guard call the responsible official directly when the name is known.

4. If the Company provides a blank sign-in sheet, log, or visitors register, it is acceptable to sign it. NEIC employees shall not, however, sign a release of liability (waiver) when entering a facility under the authority of Federal law.

5. If entry is refused, the employee should not contest the issue with the facility representative, but will immediately do the following:

- a. Obtain name and title of the individual denying entry and record the date and time;
- b. Cite the appropriate EPA-administered legislation, ask if he/she heard and understood the reason for your presence, record the answer and any reasons given for denial of entry;
- c. Leave the premises

After leaving the facility, the employee should, at the earliest possible moment, inform the NEIC Enforcement Specialist Office, and the appropriate Regional enforcement attorney of the events which took place.

#### REQUESTING INFORMATION

Section 308 of the Clean Water Act and Section 114 of the Clean Air Act address the protection of trade secrets and confidential information. As a general policy, EPA is extremely reluctant to accept this type of information unless it is necessary for carrying out Agency functions under these Acts.

In compliance with EPA regulations, a request\* for Company information, pursuant to statutory authority, will contain a statement allowing the facility to designate all or part of the information requested by the Agency as confidential by marking it according to: Title 40 of the Code of Federal Regulations (CFR), Part 2, Subpart B, Sections 2.201-2.304 [41 Federal Register (FR) 36902]. In addition to citing the appropriate regulation(s), the request should state that:

- (1) the business may, if it desires, assert a business confidentiality claim covering part or all of the information in the manner described by 40 CFR Part 2, and that information covered by such a claim will be disclosed by EPA only to the extent, and by means of the procedures, set forth in those regulations;
- (2) if no such claim accompanies the information when it is received by EPA, it may be made available to the public by EPA without further notice to the business.

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\* Written requests are generally sent through the Regional Enforcement Division.

When conducting a plant evaluation, inspection or reconnaissance, NEIC personnel should not accept confidential information unless it is essential in performing NEIC responsibilities. In those limited situations, the source should be requested to provide NEIC with a written statement identifying the material which is entitled to confidential treatment. In addition, reasons must be given to substantiate the claim, including any supportive technical data or legal authority. By statute, effluent and emission data are not confidential. Any confidential information received in the mail or hand-delivered shall be marked Confidential and handled appropriately as outlined in the document control program (see page II-29).

#### DISCLOSURE OF OFFICIAL INFORMATION

It is EPA policy to make information about EPA and its work available, freely and equally, to all individuals, groups and organizations. This policy, however, does not extend to confidential information or investigatory information and evidence relating to the suspected violation of Federal environmental laws.

Any NEIC employee who receives a request, written or oral, for inspection or disclosure of NEIC investigatory records, whether made under judicial discovery procedures or the Freedom of Information Act, shall immediately advise the Chief, Enforcement Specialist Office for approval to release the information. This procedure also applies to all requests for "confidential" information. Non-confidential information disseminated outside of the Agency will be directed through the appropriate Regional Office or Headquarters.

## PROJECT COORDINATOR RESPONSIBILITIES AND AUTHORITY

The Project Coordinator, is the primary contact for a specific, assigned project. All communications with the Regional, State, local and company officials, the public, and the news media (press, radio, TV, etc.) need to be coordinated through this individual.

### PROJECT PLAN

The Project Coordinator is responsible for preparing the project plan. This will involve obtaining the necessary inputs from the requester (Region, Headquarters, etc.), all affected NEIC Branches, the legal staff, the safety officer, the administrative staff, and the Evidence Audit Unit. A draft plan (stamped DRAFT REPORT FOR AGENCY REVIEW ONLY, DO NOT DUPLICATE) will be provided for internal review to all Branch Chiefs and other affected parties. The Coordinator is responsible for disseminating the draft project plan for review and accounting for all draft copies. After comments have been incorporated into the final project plan, all drafts will be disposed of and a revised copy will be sent to the Region or other EPA organization requesting the work. As a general rule, the final plan should be sent to the requester and given to project participants at least two weeks before any field work begins.

A briefing on the plan will be held prior to beginning any field work. At that time, those aspects of the study such as test methods, chain-of-custody procedures, legal aspects, safety requirements, document control and related activities will be discussed with all participants in the project, who are expected to read the project

plan and be aware of the required procedures. (Section I discusses changes to the project plan once it has been transmitted to the requester )

## ADMINISTRATIVE MATTERS

### Petty Cash and Procurement Requests

Prior to the survey, the respective NEIC Branches are expected to submit purchase requisitions for survey needs in a timely fashion to avoid emergency requests. The Project Coordinator is responsible for determining petty cash needs for the study and designating those individuals who will receive petty cash. Proper receipts are necessary to receive credit for petty cash. When appropriate, the Project Coordinator will arrange to use purchase orders in the field. For example, ice is often required in large quantities during a survey, thus, a purchase requisition is often appropriate.

### Time Keeping

The Project Coordinator is expected to certify as correct the Time Reports used by field personnel to report regular time, overtime, and compensatory hours. It is expected that Project Coordinators and Branch Chiefs be familiar with the Fair Labor Standards Act, the EPA Pay Administration Manual as it pertains to overtime, holiday and hazardous-duty pay, and compensatory hours. As appropriate, the Coordinator will be provided a packet containing the necessary pay manuals, policy statements, and forms. Instructions for the completion and submission of time records will be provided by the respective Branch Chiefs.

## FIELD ACTIVITIES

The Project Coordinator shall have the overall responsibility for determining that all field activities are performed expeditiously and that the project objectives are met. Branch Chiefs are expected to assign personnel capable of performing the Branch responsibility associated with a particular study; these personnel are expected to understand and follow the procedures relative to their assignments.

The necessity for change from the project plan not affecting the objectives or overall scope of the study---such as addition or deletion of sampling points; modifications to schedules or frequencies; or changes in analytical load---will be coordinated through and approved by the Project Coordinator. This includes any support work being conducted in Denver.

Transportation needs in the field will be determined during the planning stage. GSA vehicles will be used whenever available. The Project Coordinator will be responsible for assuring that vehicles and mobile laboratories transported from Denver will generally travel in convoy, and it is imperative that the Project Coordinator be notified immediately of any delays that occur enroute. It is also expected that the rolling stock (mobile laboratories, vehicles, boats, monitoring equipment) are kept in a state of readiness. If equipment is returned from the field needing repair, maintenance, or overhaul, it shall be accomplished expeditiously by the appropriate Branch.

During the field study, the Project Coordinator or designee is responsible for seeing that all chain-of-custody and quality control procedures for sampling, flow monitoring, analyses, record keeping, etc. are followed. The field personnel are, however, expected to

understand and follow the custody procedures relative to their assignments. Following completion of the field activities and before returning to NEIC, the Project Coordinator or designee shall account for all field documentation---such as field logbooks, sample tags, Chain-of-Custody records---and verify that it is complete.

The Project Coordinator is responsible and has the authority for assuring that all field work is conducted safely, and that required safety equipment is used. All participants are required to read and adhere to the NEIC SAFETY MANUAL.

#### REPORT WRITING

The Project Coordinator, in cooperation with other personnel, will develop an outline and determine the writing assignments for a project report. The Coordinator is responsible for assembling the report and circulating review copies which will be numbered and stamped DRAFT REPORT FOR AGENCY REVIEW ONLY, DO NOT DUPLICATE. The Coordinator shall make every attempt to ensure that all draft copies are returned, and that all appropriate comments are incorporated. These draft reports are disposed of upon completion of the final report. In preparing reports, the quality of, and the ability to substantiate and defend the contents, are foremost. The Project Coordinator, NEIC management, and supervisory personnel are responsible for assuring that all NEIC reports achieve this goal.

## SAMPLE CONTROL

A sample\* is physical evidence collected from a facility or from the environment. An essential part of all NEIC enforcement investigations is that the evidence gathered be controlled. To accomplish this, the following sample identification and Chain-of-Custody procedures have been established

### SAMPLE IDENTIFICATION

The method of identification of a sample depends on the type of measurement or analyses performed. When in-situ measurements are made, the data are recorded directly in logbooks or Field Data Records (FDRs), with identifying information (project code, station numbers, station location, date, time, samplers), field observations and remarks. Examples of in-situ measurements are pH, temperature, conductivity, flow measurement, continuous air monitoring, and stack gas analysis.

Samples, other than in-situ measurements, are identified by a sample tag (page II-12) or other appropriate identification (hereinafter referred to as a sample tag)

These samples are removed from the sample location and transported to a laboratory or other location for analysis. Before removal, however, a sample is often separated into portions depending upon the analyses to be performed. Each portion is preserved in

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\* For purposes of this manual, the term 'sample' includes remote sensing imagery.

SAMPLE TAGS

II-12  
(10/79)

Water Tag (White)


Proj. Code		Station No.		Mo./Day/Yr.		Time		Designate:	
								Comp.	Grab
Station Location						Samplers: (Signature)			
Tag # <b>1234</b>	Lab Sample # 	Remarks:	Analyses						
			BOD	Anions					
			Solids (TSS)(TDS)(SS)						
			COD, TOC, Nutrients						
			Phenolics						
			Mercury						
			Metals						
			Cyanide						
			Oil and Grease						
			Organics GC/MS						
Priority Pollutants									
Volatile Organics									
Pesticides									
Mutagenicity									
Bacteriology									

Air Tag (Blue)

Proj. Code		Station No.		Mo./Day/Yr.		Time		Sequence No.	
Station Location:						Samplers: (Signature)			
Tag # <b>1234</b>	Lab Sample # 	Remarks:	Sample Type:						
			<input type="checkbox"/> Source Filter <input type="checkbox"/> Probe Wash <input type="checkbox"/> Impinger Catch <input type="checkbox"/> Ambient Filter <input type="checkbox"/> Ambient Impinger <input type="checkbox"/> Solid Adsorbant <input type="checkbox"/> Liquid Adsorbant <input type="checkbox"/>						

Reverse Side

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accordance with applicable procedures and the sample container is identified by a sample tag. The information recorded on the sample tag includes:

- Project Code - A three-digit number assigned by NEIC
- Station Number - A two-digit number assigned by the Project Coordinator and listed in the project plan
- Date - A six-digit number indicating the year, month, and day of collection.
- Time - A four-digit number indicating the military time of collection - for example: 0954
- Station Location - The sampling station description as specified in the project plan
- Samplers - Each sampler is identified.
- Tag Number - A unique serial number is stamped on each tag
- Remarks - The samplers record pertinent observations.

The tag used for water samples (also soil, sediment and biotic samples) contains an appropriate place for designating the sample as a grab or a composite, and identifying the type of sample collected for analyses. The tag used for air samples requires the sampler to designate the sequence number and identify the sample type. The Project Coordinator will detail procedures for completing tags used for soil, sediment and biotic samples. The sample tags are attached to or folded around each sample.

After collection, separation, identification, and preservation, the sample is maintained under Chain-of-Custody procedures discussed below. If the composite or grab sample is to be split, it is aliquoted into similar sample containers. Identical sample tags are completed and attached to each split and marked "\_\_\_\_\_ Split". The tag identifies the split sample for the appropriate government agency,

facility, laboratory, or company. In a similar fashion, all tags on blank or duplicate samples will be marked "Blank" or "Duplicate" respectively.

#### CHAIN-OF-CUSTODY PROCEDURES (March 29, 1978)

Due to the evidentiary nature of samples collected during enforcement investigations, possession must be traceable from the time the samples are collected until they are introduced as evidence in legal proceedings. To maintain and document sample possession, chain-of-custody procedures are followed.

#### Sample Custody

A sample is under custody if:

1. It is in your possession, or
2. It is in your view, after being in your possession, or
3. It was in your possession and then you locked it up to prevent tampering, or
4. It is in a designated secure area.

#### Field Custody Procedures

1. In collecting samples for evidence, collect only that number which provides a good representation of the media being sampled. To the extent possible, the quantity and types of samples and sample locations are determined prior to the actual field work. As few people as possible should handle samples.

2. The field sampler is personally responsible for the care and custody of the samples collected until they are transferred or dispatched properly.
3. Sample tags shall be completed for each sample, using waterproof ink unless prohibited by weather conditions. For example a logbook notation would explain that a pencil was used to fill out the sample tag because a ballpoint pen would not function in freezing weather.
4. The Project Coordinator determines whether proper custody procedures were followed, during the field work and decides if additional samples are required.

#### Transfer of Custody and Shipment

1. Samples are accompanied by a Chain-of-Custody Record (see pages II-16 and II-17). When transferring the possession of samples, the individuals relinquishing and receiving will sign, date, and note the time on the Record. This Record documents sample custody transfer from the sampler, often through another person, to the analyst in a mobile laboratory, or at the NEIC laboratory in Denver.
2. Samples will be packaged\* properly for shipment and dispatched to the appropriate NEIC laboratory\*\* for analysis, with a separate custody record accompanying each shipment (e.g., one for each field laboratory, one for samples

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\* See Appendix B

\*\* See Appendix C for Safety Precautions When Accepting Samples From Outside Sources.

Distribution	Original Accompanies Shipment	Copy to Coordinator	Field Files
1	1	1	1

CHAIN OF CUSTODY RECORD

Proj No		Project Name			SAMPLE TYPE										NUMBER OF CONTAINERS	Remarks	
SAMPLERS (Signature)					Source Filter Probe Wash Impinger Catch Ambient Filter Ambient Impinger Solid Adsorbant Liquid Adsorbant												
STA NO	DATE	TIME	SEQ NO	STATION LOCATION													
Relinquished by (Signature)				Date/Time	Received by (Signature)				Relinquished by (Signature)				Date/Time	Received (Signature)			
Relinquished by (Signature)				Date/Time	Received by (Signature)				Relinquished by (Signature)				Date/Time	Received (Signature)			
Relinquished by (Signature)				Date/Time	Received for Laboratory by (Signature)				Date/Time		Remarks						

CHAIN-OF-CUSTODY RECORD (AIR)

II-17  
(10/79)

driven to Denver) Shipping containers will be padlocked for shipment to the Denver laboratory. The method of shipment, courier name(s) and other pertinent information is entered in the "Remarks" box.

3. Whenever samples are split with a source or government agency, a separate Chain-of-Custody Record is prepared for those samples and marked to indicate with whom the samples are being split. The person relinquishing the samples to the facility or agency should request the signature of a representative of the appropriate party, acknowledging receipt of the samples. If a representative is unavailable or refuses to sign, this is noted in the "received by" space. When appropriate, as in the case where the representative is unavailable, the custody record should contain a statement that the samples were delivered to the designated location at the designated time.
4. All shipments will be accompanied by the Chain-of-Custody Record identifying its contents. The original Record will accompany the shipment, and a copy will be retained by the Project Coordinator.
5. If sent by mail, the package will be registered with return receipt requested. If sent by common carrier, petty cash will be used for expenditures of less than \$100, otherwise a Government Bill of Lading will be used. Air freight shipments are sent collect. Freight bills, post office receipts and Bills of Lading will be retained as part of the permanent documentation.

Laboratory Custody Procedures

1. A designated sample custodian accepts custody of the shipped samples and verifies that the information on the sample tags matches that on the Chain-of-Custody Records. Pertinent information as to shipment, pickup, courier, etc., is entered in the "Remarks" box. The custodian then enters the sample tag data into a bound logbook which is arranged by project code and station number.

The laboratory custodian will assign a unique laboratory number to each sample tag.

2. The custodian distributes samples to the appropriate analysts. The names of individuals who receive samples are recorded in internal Branch records. Laboratory personnel are responsible for the care and custody of samples from the time they are received until they are exhausted or returned to the custodian. Samples received after normal working hours may be analyzed immediately or stored as appropriate.
3. When sample analysis and necessary quality assurance checks have been completed in the field laboratory, the unused portion of the sample must be disposed of properly. All identifying tags, data sheets, and laboratory records shall be retained as part of the permanent documentation. Samples forwarded to the Denver laboratory for analysis will be retained after analyses and quality assurance checks are completed, and until investigative documents are requested by the Evidence Audit Unit for the evidentiary file; at that time all identifying tags will be removed and retained as part of the permanent documentation. Sample containers and remaining sample material should be appropriately disposed of.

4. To avoid potential contamination, tags from samples received by the Regulated Laboratory are not to be permanent documents and will not be incorporated into the evidentiary file. The Regulated Laboratory will verify that the information on arriving sample tags is accurately recorded on the appropriate Chain-of-Custody Records and notify EAU of any discrepancies. The Sample Tag number is entered on the Chain-of-Custody Record in the comments column. Regulated laboratory personnel initial the entry after verifying sample tag data or resolving a discrepancy.
5. The Regulated Laboratory will submit a memorandum to EAU when the project documents are assembled. The memorandum, to be retained in the evidentiary file, certifies that the sample tags have been appropriately disposed of together with the sample containers and any remaining portions.

## DOCUMENT CONTROL

The goal of the NEIC Document Control Program is to assure that all project documents issued to or generated by NEIC personnel will be accountable when the project is completed. This program includes a serialized document number system, a document inventory procedure, and an evidentiary filing system, all operated and controlled by the Evidence Audit Unit (EAU).

Accountable documents used or generated by NEIC employees include logbooks, field data records, correspondence, sample tags, graphs, Chain-of-Custody records, bench sheets and photographic prints (see page II-29 for a more complete list). Each document bears a serialized number and is listed, with the number, in a project document inventory assembled by each Branch at the project's completion. Unused accountable documents may be disposed of after they are returned to the EAU. Unless prohibited by weather, waterproof ink is used in recording all data on serialized accountable documents.

### SERIALIZED DOCUMENTS

The Evidence Audit Unit (EAU) is responsible for assigning the necessary serialized NEIC documents to project personnel for field activities. Once a Project Coordinator is appointed, all field logbooks, field data records, sample tags and Chain-of-Custody records are assigned to this person. The Coordinator is responsible for ensuring that a sufficient supply of documents is obtained for an investigation and that these documents are properly distributed to the appropriate personnel. The EAU provides the Project Coordinator with a list of the serialized project documents that were issued to personnel for that project.

## PROJECT LOGBOOKS

The logbook of the Project Coordinator will document the transfer of logbooks to the individuals who have been designated to perform specific tasks on the survey. All pertinent information should be recorded in these logbooks from the time each individual is assigned to the project until the project is completed.

Logbook entries should be dated, legible and contain accurate and inclusive documentation of an individual's project activities. Because the logbook forms the basis for the later written reports, it must contain only facts and observations. Language should be objective, factual and free of personal feelings or other terminology which might prove inappropriate. Entries made by individuals other than the person to whom the logbook was assigned are dated and signed by the individual making the entry.

Field analysts who conduct their assigned project analyses in a mobile laboratory are assigned a logbook by the appropriate Branch. In addition to information documenting the analysis performed, field analysts document in their logbooks or on bench sheets the date and results of any calibration of mobile laboratory equipment. A record is also kept of any incidents related to the survey; for example, the electricity going off in the laboratory, tampering with government vehicles or equipment, etc. Appropriate notations of visitors to the mobile laboratory, such as facility personnel, are entered in the logbook.

All project logbooks are the property of NEIC and are to be returned to the Project Coordinator when a survey assignment has been concluded.

## FIELD DATA RECORDS

Where appropriate, serialized Field Data Records (in the form of individual sheets or bound logbooks) are maintained for each survey sampling station or location and the project code and station number are usually recorded on each page. The Project Coordinator also numbers the FDR covers with the appropriate project code and station number. All in-situ measurements and field observations are recorded in the FDR's with all pertinent information necessary to explain and reconstruct sampling operations. Each page of a Field Data Record is dated and signed by all individuals making entries on that page. The Coordinator and the field team on duty are responsible for ensuring that FDR's are present during all monitoring activities and are stored safely to avoid possible tampering. Any lost, damaged or voided FDR's are reported to the Project Coordinator.

## SAMPLE INDENTIFICATION DOCUMENTS

All necessary serialized sample tags are distributed to field personnel by the Project Coordinator (or designated project participant) and the serial numbers are recorded in the Project Coordinator's logbook. Individuals are accountable for each tag assigned to them. A tag is considered in their possession until it has been filled out, attached to a sample, and transferred to another individual with the corresponding Chain-of-Custody Record. At no time are any sample tags to be discarded and if any tags are lost, voided, or damaged, this is noted in the appropriate FDR or logbook immediately upon discovery and the Project Coordinator is notified. At the completion of the field investigation activities, all unused sample tags are returned to the designated individual who checks them against the list of assigned tag serial numbers. Tags attached to those samples split with the source or another government agency are accounted for.

### CHAIN-OF-CUSTODY RECORDS

Serialized Chain-of-Custody Records are assigned and accounted for in a manner similar to that used for sample tags. When samples are transferred to mobile laboratory personnel, the analyst, after signing, retains the white (original) custody record and files it in a safe place. The courier returns a copy of the custody record to the Project Coordinator. A similar procedure is followed when dispatching samples via common carrier, mail, etc., except that the original accompanies the shipment and is signed and retained by the receiving laboratory sample custodian.

When samples are split with the source or another government agency, this is noted on a separate Custody Record (see page II-15). The tag serial numbers from all splits are recorded on the Custody Record. A copy of the the custody record will be provided to the source or agency upon request; and the white originals are returned to the Project Coordinator.

### OTHER CONTROLLED DOCUMENTS

The logbooks and data sheets that are used for various purposes such as chemical, bacteriological, and biological analyses, equipment calibration, etc., within the NEIC laboratories are not distributed by the EAU. These documents are accountable by the procedures discussed in the following paragraphs.

Bench sheets and other similar documents will be serialized. Each document will show the project number, dates, name(s) of analyst(s) and other pertinent information. Instrument printouts and other separate documents except laboratory logbooks will be labeled in a similar manner. These documents will be sent to the Evidentiary File when requested.

All laboratory observations and calculations not recorded on serialized bench sheets, instrument graph printouts, etc., are entered in serialized logbooks assigned by a Branch custodian or other designated individual. Each numbered page of the logbook\* actually consists of two pages - an original and a copy. The original copy is perforated so that it can be removed from the logbook when project files are compiled for the Evidentiary File. When this type of logbook is unavailable, duplicates of individual pages will be identified.

The logbook needs to contain information sufficient to recall and describe succinctly each step of the analysis performed because it may be necessary for the analyst to testify in subsequent enforcement proceedings. Moreover, sufficient detail is necessary to enable others to reconstruct the procedures followed should the original analyst be unavailable for testimony. Any irregularities observed during the testing process need to be noted. If, in the technical judgment of the analyst, it is necessary to deviate from a particular analytical method, the deviation shall be justified and properly documented

The serialized logbook assigned to an individual can be used for more than one project. However, only one project is discussed on each page. That page is labeled with the project code, dated, and signed by the individual. The custodian closes out each completed laboratory logbook and may retain it or return it to the analyst for reference purposes.

Where applicable, the Branch file custodian issues a serialized instrument logbook in which all information relating to calibration and maintenance of a particular laboratory instrument is recorded

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\* The original page requires no carbon paper. The logbook is referred to as an NCR logbook.

## PHOTOGRAPHS

When movies, slides or photographs are taken which visually show the effluent or emission source and/or any monitoring locations, they are numbered to correspond to logbook entries. The name of the photographer, date, time, site location, and site description are entered sequentially in the logbook as photos are taken. Chain-of-Custody procedures depend upon the type of film and the processing it requires. Once developed, the slides or photographic prints shall be serially numbered corresponding to the logbook descriptions and may be labeled.

## CORRECTIONS TO DOCUMENTATION

As previously noted, unless prohibited by weather conditions, all original data recorded in logbooks, FDR's, sample tags, custody records and other data sheet entries are written with waterproof ink. None of the accountable serialized documents listed above are to be destroyed or thrown away even if they are illegible or contain inaccuracies which required a replacement document.

If an error is made on an accountable document assigned to one individual, that individual may make contemporaneous corrections simply by crossing a line through the error and entering the correct information. Any subsequent error discovered on an accountable document should be corrected by the person who made the entry. All subsequent corrections must be initialed and dated.

If a sample tag is lost in shipment, or a tag was never prepared for a sample(s), or a properly tagged sample was not transferred with a formal NEIC Chain-of-Custody Record, the following procedure applies. A written statement is prepared detailing how the sample was collected, air-dispatched or hand-transferred to the field or NEIC laboratory.

The statement should include all pertinent information, such as entries in field logbooks regarding the sample, whether the sample was in the sample collector's physical possession or in a locked compartment until hand-transferred to the laboratory, etc. Copies of the statement are distributed to the Project Coordinator, and the appropriate Branch project files.

#### CONSISTENCY OF DOCUMENTATION

Before release of a final project report, the Chemistry and/or Biology Branches assemble and cross-check information on corresponding sample tags, custody records, bench sheets, analyst logbooks and sample entry logbooks to ensure that data pertaining to each particular sample is consistent throughout the record. The Project Coordinator concurrently performs a cross-check of evidentiary data in his possession (FDR's, logbooks, custody records, etc.) to ensure that information recorded corresponds with that of the NEIC laboratories and is consistent throughout the project record. A statement that all project evidentiary data has been accounted for accompanies the transfer of the assembled branch file to the EAU.

The EAU is responsible for correlating accountable documents for a project when there has been a change in the project number

#### DOCUMENT NUMBERING SYSTEM AND INVENTORY PROCEDURE

To provide document accountability to the appropriate individuals, each of the document categories discussed above features a unique serialized number for each item within the category. Logbooks, FDR's, sample tags and custody records are serially numbered by the EAU before assignment to project personnel. The logbooks and FDR's are usually given a five-digit number, with the project code as the

first three digits followed by a two-digit document number. Sample tags and custody records are labeled with a four digit document number and the project code. All Branch documentation not covered by the above (logbooks, data sheets, graphs, etc.) are uniquely and serially numbered using the project code as part of the number

All other documents (such as recorder graph paper, data calculation sheets, memorandum, correspondence, photos, etc.) which are generated during a project are sequentially numbered with the project code, the Branch initials and a serialized number (e.g., 707-CB-01), usually at the time the Branch file is assembled.

#### BRANCH FILES

After a Branch has completed its work for a particular investigation, all documents generated from that project should be assembled in the Branch file. Individuals may retain clean (no handwritten comments) copies of documents for their personal files but only after personally verifying that the original or similar copy is in the Branch file. The Chief of each Branch in Technical Programs is responsible for assuring the collection, assembly, and inventory of all documents relative to a particular project at the time the project objectives are completed. The file then becomes accountable. Any records leaving the file must be signed out.

#### EVIDENTIARY FILE

When the NEIC has completed the project objectives, all inventoried Branch file documents are reviewed and submitted to the Evidence Audit Unit by each Branch Chief. By this time each document will have been labeled with a unique serialized number as specified above. The format of the Evidentiary File is to arrange each project by Branch documents and includes the following document classes:

- A. Project Plan
- B. Project Logbooks
- C. Field Data Records
- D. Sample Identification Documents
- E. Chain-of-Custody Records
- F. Analytical Logbooks, Lab Data, Calculations, Bench Cards, Graphs, etc.
- G. Correspondence
  - 1. Intra-office
  - 2. EPA
  - 3. Industry
  - 4. Record of Confidential Material
- H. Report Notes, Calculations, etc.
- I. References, Literature
- J. Sample (on-hand) Inventory
- K. Check-out Logs
- L. Litigation Documents
- M. Miscellaneous - photos, maps, drawings, etc.
- N. Final Report

Once deposited in the Evidentiary File, documents may only be checked out through the EAU or designated representative.

## REPORTS

All draft reports are dated and numbered and are accountable. They are stamped in red DRAFT REPORT FOR AGENCY REVIEW ONLY, DO NOT DUPLICATE on the cover page. The author is responsible for disseminating draft reports for internal NEIC review, and preparing the appropriate transmittal memorandum to the requestor. All draft copies of the report are to be returned to the author. Once comments have been incorporated and the final report has been prepared, all draft copies are disposed of. However, Regional Offices may retain a copy of the draft report with their comments until they receive the final report at which time the draft will be returned to the NEIC for disposal.

### LITIGATION DOCUMENTS

Any court documents, litigation reports, letters, memorandum, etc from the Chief, Enforcement Specialist Office, EPA Regional Office(s), State Pollution Control Offices, etc., which discuss legal matters or strategies, should be placed in a separate file folder (see Evidentiary File format) which is reviewed by the Enforcement Specialist Office at the appropriate time.

### CONFIDENTIAL INFORMATION

Any information received by NEIC with a request of confidentiality is handled as "confidential." A separate, locked file is maintained in the Evidentiary File room for the segregation and storage of all confidential and trade-secret information. Upon receipt by NEIC, this information is directed to and recorded in the Confidential Inventory Log by the EAU. The information is then made available to NEIC personnel, but only after it has been logged out. The information should be returned to the locked file at the conclusion of each working day unless the employee can guarantee its security. Confidential information may not be reproduced except upon approval by and under the supervision of the EAU. Any reproduction should be kept to an absolute minimum. The EAU will enter all copies into the document control system and apply the same requirements as for the original. In addition, this information may not be entered into any computer or data handling system. Confidential documents may not be destroyed except upon approval by and under the supervision of the Chief, Enforcement Specialist Office. The Project Coordinator will be notified prior to destruction of confidential information. The EAU shall remove and retain the cover page of any confidential information disposed of for one year and shall keep a record of the destruction in the Confidential Inventory Log.

## QUALITY ASSURANCE MANAGEMENT

Quality assurance (QA) procedures are followed at NEIC to assure that high quality data are produced. Documented, official EPA and/or state-of-the-art measurement methods are used with integral quality control (QC) procedures to detect and minimize errors.

The quality of project conclusions and recommendations depends on the quality of the sampling network design, sample collection techniques, field and laboratory measurement methods, and data reduction techniques. Therefore, so far as practical, QC methods are used to verify individual measurement operations during each portion of a project.

### ORGANIZATIONAL RESPONSIBILITY

The Quality Assurance Coordinator for the Center is responsible for assisting each Branch Chief in developing quality control procedures for his Branch. Each Branch that performs measurements is responsible for developing and documenting QC procedures, where appropriate, for the measurement operations it performs.

### MEASUREMENT METHODS

When available, EPA-approved methodology is used. Where approved methods do not exist, such as for monitoring toxic organic compounds, each Branch will develop the methodology required to meet the study objectives. Any measurement method unique or new to NEIC is documented

to show satisfactory performance before it is used routinely. Recommended documentation for new methodology includes a method description with integral quality control procedures and, if possible, data to show the precision, accuracy, and detection limit of the method. When appropriate the format of methods documentation should address the following.

Summary and limitations of the method

List of supplies, equipment, and instrumentation required

Calibration and maintenance procedures and schedules, including the source and quality of standards

Detailed operating procedures for each step in the method; an instrument or standard reference manual is referenced only if the procedure being used is exactly described

Integral quality control procedures to verify that the measurement is being performed properly and to measure the precision, accuracy, and detection limit of the method

Method-specific forms to record all sample and quality control data

To assure that significant new methodology is consistent with the state-of-the-art, new methods are sent for review to the appropriate EPA laboratory, peer group or scientific journal.

## TRAINING

Staff members are trained before being allowed to independently perform a measurement during a survey. The Branch Chiefs are responsible for assuring that this training is provided formally or on-the-job

### DATA REVIEW

The primary responsibility for the proper performance of a measurement including QC checks lies with the employee making the measurement. The employee evaluates the QC results as soon as possible after the measurement is performed. When QC results are determined to be outside accepted limits, the measurement process is stopped, problems are corrected and documented and then the measurement is continued.

### INDEPENDENT AUDIT

The NEIC participates in all appropriate EPA interfacility air, water, and radiation performance evaluation studies. The NEIC QA Coordinator, or his designee, initiates round-robin or other inter-laboratory audit procedures to assure the quality of specific measurement techniques, as required.

### DEFINITIONS

Quality Control (QC) - The documentation and evaluation of methods, personnel training, and routine performance checks integral to each measurement process which is used to verify proper performance. Examples of the routine checks are instrument maintenance and calibration, flowrate and leak measurement checks, and blank, duplicate, and spiked sample determinations. The resulting data are evaluated immediately and problems are corrected by the individual performing the checks.

Quality Assurance (QA) - The sum of independent audits performed to verify that the quality control system is effective and adequate to assure high quality data. Quality assurance audits are generally performed by a person or technique outside of the normal operation. Examples are audits using reference flow measuring devices and laboratory reference standards.

Accuracy - The degree of agreement between a measured value and the true value. It is difficult to determine the accuracy of a measurement on an environmental sample because the true value is unknown. Therefore, the accuracy of an individual measurement procedure is usually determined by analyzing a standard reference material or device, or by spiking a sample with a known quantity of material and re analyzing.

Precision - The degree of agreement between repeated measurements of one property using the same method or technique.

Detection Limit - The limit at which one can distinguish between inherent randomness or instrument "noise" in the measurement and a real value. Operationally defined as the analyte concentration equivalent to three times the standard deviation of background readings.

## APPENDICES

- A WITNESS GUIDELINES
- B PROCEDURES FOR AIR SHIPMENT  
OF ENVIRONMENTAL LABORATORY  
SAMPLES
- C SAFETY PRECAUTIONS WHEN ACCEPTING  
SAMPLES FROM OUTSIDE SOURCES

## APPENDIX A

### WITNESS GUIDELINES

The following suggestions are made for prospective witnesses in order to lessen the fears and apprehensions which almost everyone has when first testifying before a board, commission, hearing officer, or in court. Even those who have testified previously encounter a certain anxiety when called for a repeat performance. When a witness is properly prepared, both with regard to the subject matter of testimony and conduct on the witness stand, there should be little fear about testifying.

It is of utmost importance that the witness be thoroughly prepared as to the subject matter of his testimony. Only the witness can recall what occurred in the field and/or laboratory and why. Since many cases are tried substantially after field and laboratory activities are conducted, it is imperative that adequate documentation be originally prepared in order that a witness' memory may be refreshed. A thorough and detailed review of all survey documents is the only way prospective witnesses can be adequately prepared.

In order to assist witnesses on how they should conduct themselves the following suggestions are given

The witness will be required to take an oath to tell nothing but the truth. The important point is to remember that there are two ways to tell the truth---one is a halting, stumbling, hesitant manner, which makes the board member, hearing officer, judge or jury doubt that the witness is telling all the facts in a truthful way, and the other way is in a confident, straightforward manner, which inspires faith in what is being said. It is most important that the witness testify

in the latter manner. To assist a witness in testifying in such a manner, a list of time-proven hints and aids are provided below.

#### GENERAL INSTRUCTIONS FOR A WITNESS

If you are to be a witness in a case involving testimony concerning the appearance of an object, place, condition, etc., try to refresh your recollection by again inspecting the object, place, condition, field notes and records, etc., before the hearing or trial. While making such inspection, close your eyes and try to picture the item and recall, if you can, the important points of your testimony. Repeat the test until you have thoroughly familiarized yourself with the features of your testimony that will be given.

Before you testify, visit a court trial or board hearing and listen to other witnesses testifying. This will make you familiar with such surroundings and help you to understand some of the things you will come up against when you testify. At least be present at the hearing of the matter in which you are to testify in sufficient time to hear other witnesses testify before you take the witness chair. This, however, may not always be possible since, on occasion, witnesses are excluded from the court room.

A good witness listens to the question and then answers calmly and directly in a sincere manner. The facts should be well known so they can be communicated. Testimony in this manner applies to cross-examination as well as direct examination.

Wear neat, clean clothes when you are to testify. Dress conservatively.

Do not chew gum while testifying or taking an oath. Speak clearly and do not mumble. You will not be permitted to smoke while testifying.

#### DIRECT EXAMINATION

In a discussion on administrative procedures, E. Barrett Prettyman, Retired Chief Judge, U.S. Court of Appeals for the District of Columbia, gave the following advice:

The best form of oral testimony is a series of short, accurate, and complete statements of fact. Again, it is to be emphasized that the testimony will be read by the finder of the facts, and that he will draw his findings from what he reads . . . Confused, discursive, incomplete statements of fact do not yield satisfactory findings.

Stand upright when taking the oath. Pay attention and say "I do" clearly. Do not slouch in the witness chair.

Do not memorize what you are going to say as a witness. If you have prepared answers to possible questions, by all means do not memorize such answers. It is, however, very important that you familiarize yourself as much as possible with the facts about which you will be called upon to testify.

During your direct examination, you may elaborate and respond more fully than is advisable on cross-examination. However, when you volunteer information, do not ramble and do not stray from the main point raised in your lawyer's question. The taking of testimony is a dialogue, not a monologue. If your testimony concerns a specialized technical area, the Court or hearing board will find it easier to understand if it is presented in the form of short answers to a

logical progression of questions. In addition, by letting your lawyer control the direction of your testimony, you will avoid making remarks which are legally objectionable or tactically unwise.

Be serious at all times. Avoid laughing and talking about the case in the halls, restrooms or any place in the building where the hearing or trial is being held.

While testifying, talk to the judge, hearing officer or jury. Look at him or them most of the time, and speak frankly and openly as you would to any friend or neighbor. Do not cover your mouth with your hand. Speak clearly and loudly enough so that anyone in the hearing room or courtroom can hear you easily. At all times make certain that the reporter taking the verbatim record of your testimony is able to hear you and record what you actually say. The case will be decided entirely on the words that are finally reported as having been the testimony given at the hearing or trial. Always make sure that you give a complete statement in a complete sentence. Half statements or incomplete sentences may convey your thought in the context of the hearing, but may be unintelligible when read from the cold record many months later.

#### CROSS EXAMINATION

Concerning cross-examination, Judge Prettyman gives the following advice to prospective witnesses:

Don't argue. Don't fence. Don't guess. Don't make wisecracks. Don't take sides. Don't get irritated. Think first, then speak. If you do not know the answer but have an opinion or belief on the subject based on information, say exactly that and let the hearing officer decide whether you shall or shall not give such information as you have. If a 'yes or no' answer to a question is demanded but you think that a

qualification should be made to any such answer, give the 'yes or no' and at once request permission to explain your answer. Don't worry about the effect an answer may have. Don't worry about being bulldozed or embarrassed; counsel will protect you. If you know the answer to a question, state it as precisely and succinctly as you can. The best protection against extensive cross-examination is to be brief, absolutely accurate, and entirely calm.

The hearing officer, board member or jury wants only the facts, not hearsay, conclusions, or opinions. You usually will not be allowed to testify about what someone else has told you.

Always be polite, even to the attorney for the opposing party.

Do not be a smart aleck or cocky witness. This will lose you the respect and objectivity of the trier of the facts in the case.

Do not exaggerate or embroider your testimony.

Stop instantly when the judge, hearing officer or board member interrupts, or when the other attorney objects to what you say. Do not try to sneak your answer in.

Do not nod your head for a "yes" or "no" answer. Speak out clearly. The reporter must hear an answer to record it.

If the question is about distances or time and your answer is only an estimate, be certain that you say it is only an estimate.

Listen carefully to the question asked of you. No matter how nice the other attorney may seem on cross-examination, he may be trying to

hurt you as a witness. Understand the question. Have it repeated if necessary; then give a thoughtful, considered answer. Do not give a snap answer without thinking. You cannot be rushed into answering, although, of course, it would look bad to take so much time on each question that the board member, hearing officer or jury would think that you are making up the answers.

Answer the question that is asked--not the question that you think the examiner (particularly the cross-examiner) intended to ask. The printed record shows only the question asked, not what was in the examiner's mind and a nonresponsive answer may be very detrimental to your side's case. This situation exists when the witness thinks "I know what he is after but he hasn't asked for it." Answer only what is asked.

Explain your answers if necessary. This is better than a simple "yes" or "no." Give an answer in your own words. If a question cannot be answered truthfully with a "yes" or "no," you have a right to explain the answer.

Answer directly and simply the question asked you and then stop. Never volunteer information.

If by chance your answer was wrong, correct it immediately; if your answer was not clear, clarify it immediately.

You are sworn to tell the truth. Tell it. Every material truth should be readily admitted, even if not to the advantage of the party for whom you are testifying. Do not stop to figure out whether your answer will help or hurt your side. Just answer the question to the best of your ability.

Give positive, definite answers when at all possible. Avoid saying "I think," "I believe," "in my opinion." If you do not know, say so. Do not make up an answer. You can be positive about the important things which you naturally would remember. If asked about little details which a person naturally would not remember, it is best to say that you do not remember.

Do not act nervous. Avoid mannerisms which will make it appear that you are scared, or not telling the truth, or all that you know.

Above all, it is most important that you do not lose your temper. Testifying at length is tiring. It causes fatigue. You will recognize fatigue by certain symptoms: (a) tiredness, (b) crossness, (c) nervousness, (d) anger, (e) careless answers, (f) willingness to say anything or answer any question in order to leave the witness stand. When you feel these symptoms, recognize them and strive to overcome fatigue. Remember that some attorneys on cross-examination are trying to wear you out so you will lose your temper and say things that are not correct, or that will hurt you or your testimony. Do not let this happen.

If you do not want to answer a question, do not ask the judge, hearing officer or board member whether you must answer it. If it is an improper question, your attorney will object for you. Do not ask the presiding officer, judge or board member for advice.

Do not look at your attorney or at the judge, hearing officer or board member for help in answering a question. You are on your own. If the question is an improper one, your attorney will object. If the judge, hearing officer or board member then says to answer it, do so.

Do not hedge or argue with the opposing attorney.

There are several questions which are known as "trick questions." That is, if you answer them the way the opposing attorney hopes you will, he can make your answer sound bad. Here are two of them:

"Have you talked to anybody about this matter?" If you say "no," the hearing officer or board member, or a seasoned jury, will know that is not right because good lawyers always talk to the witnesses before they testify. If you say "yes," the lawyer may try to imply that you were told what to say. The best thing to say is that you have talked to Mr. \_\_\_\_\_, your lawyer, to the appellant, etc., and that you were just asked what the facts were. All we want you to do is simply tell the truth.

"Are you getting paid to testify in this appeal?" The lawyer asking this hopes your answer will be "yes," thereby implying that you are being paid to say what your side wants you to say. Your answer should be something like "No, I am not getting paid to testify; I am only getting compensation for my time off from work, and the expense it is costing me to be here."

In addition to the above suggestions and guidelines, several additional references are available for further background.

Expert Witnesses and Environmental Litigation, J. L. Sullivan and R. J. Roberts, Journal of the Air Pollution Control Assoc., April 1975, Vol. 25, No. 4.

Environmental Litigation and the In-House Engineer, F. Finn; R. C. Heidrick; K. Thompson, Journal of the Air Pollution Control Assoc., Feb. 1977, Vol. 27, No. 2.

Essentials of Cross-Examination, Leo R. Friedman, CEB 1968.

## APPENDIX B

### PROCEDURES FOR AIR SHIPMENT OF ENVIRONMENTAL LABORATORY SAMPLES

Many NEIC surveys require shipment of environmental samples by air from field locations to NEIC-Denver laboratories to meet required EPA holding times. Environmental samples collected during water surveys are categorized as: drinking water, ambient water, effluent, biological sediment, sludge, and other environmental laboratory samples. Unless noted, the following NEIC procedures comply with Department of Transportation (DOT) regulations for packaging and shipping.

1. Unpreserved drinking water, ambient water, effluent, biological sediment and sludge samples.

Normal unpreserved environmental samples collected by EPA employees are not regulated under DOT Hazardous Transportation Regulations and may be shipped using NEIC packaging and handling procedures for shipment of non-hazardous samples.

2. Preserved drinking water, ambient water, effluent, biological sediment and sludge samples.

Table 1 lists the common preservatives and preservation techniques used by EPA and listed in the Hazardous Material Table, 49 CFR §172.101. Samples preserved in the recommended manner may be shipped using current NEIC packaging and handling procedures for shipment of non-hazardous samples.

TABLE 1  
Standard Preservatives Listed in the Hazardous Materials  
Table (49 CFR §172.101) used by EPA for Preservation of Water,  
Effluent, Biological Sediment and Sludge Samples

Preservative	Sample Type/ Parameter	pH Recommendation	Quantity of Preservative Added	Weight % of Preservation	Hazard Class	Label	Packaging Exceptions	(49 CFR) Specific Requirements
HCl	Organic Carbon	<2 (~1.9)	2 ml of 1:1	0.04%	Corrosive Material	Corrosive	173.244	173.263
HgCl <sub>2</sub>	Nitrogen Species	N.A.	40 mg	0.004%	Poison B	Poison	173.364	173.372
HNO <sub>3</sub>	*Metals, Hardness	<2 (~1.6)	3 ml of 1:1	0.15%	Oxidizer, Corrosive Material	Oxidizer and Corrosive, O & Poison, Corrosive	None	173.268
H <sub>2</sub> SO <sub>4</sub>	Nitrogen Species COD, Oil & Grease P (hydrolyzable) Organic Carbon	<2 (~1.5)	2 ml of 36N	0.35%	Corrosive Material	Corrosive	173.244	173.272 173.248
NaOH	Cyanides	>12 (~12.3)	2 ml of 10N	0.080%	Corrosive Material	Corrosive	173.244	173.245(b) 173.249
H <sub>2</sub> PO <sub>4</sub>	Phenolics	<4	Sufficient to yield desired pH		Corrosive Material	Corrosive	173.244	173.245
Freezing 0°C (Dry Ice)	Biological - Fish & Shellfish Tissue**	N.A.	N.A.	N.A.	ORM-A	None	None	173.615

\* If sample must be shipped by passenger aircraft or railcar, the sample may be initially preserved by icing and immediately shipping it to the laboratory. Upon receipt in the laboratory, the sample must be acidified with conc. HNO<sub>3</sub> to pH 2. At time of analysis, sample container should be thoroughly rinsed with 1:1 HNO<sub>3</sub>; washings should be added to sample.

\*\* Dry ice is classified as a ORM-A hazard by DOT. There is no labeling requirements for samples preserved with dry ice, but samples must be packaged in accordance with the requirements of 49 CFR 173.615 and advance arrangements must be made between the shipper and the air carrier.

### 3. Reagents

Reagents which are designated as hazardous by DOT's Hazardous Material Table, 49, CFR §172.101, shall be shipped pursuant to the appropriate DOT regulations. The shipper (NEIC) is required to determine if an individually shipped reagent is likely to be classified as a hazardous material when it is not listed in the DOT Table. Nitric acid in any concentration is forbidden on passenger-carrying aircraft or railcar.

For investigations where nitric acid must be used for metals preservation, means other than transport by passenger-carrying aircraft or railcar must be used to transport the acid to the site of investigation.

### 4. Other Samples

Some environmental samples collected by EPA employees, such as leachates, untreated process materials or samples from spill investigations, may contain concentrations of contaminants in excess of those normally encountered in preserved drinking water, ambient water, effluent, biological sediment and sludge samples. If such samples are collected and shipped by air, and the technical name of a sample contaminant material is known, and if the contaminant material is designated in the Hazardous Materials Table, it must be shipped pursuant to applicable DOT Hazardous Materials regulations. If the technical name of the sample contaminant material is not known, the DOT regulations place the burden on the shipper to determine if the sample meets the definition of a hazardous material. In the case of samples being forwarded to a laboratory for analysis, it is assumed that the shipper would have some information concerning the sample,

and based on that information, be able to make a reasonable determination whether the sample is likely to be classified a hazardous material. When a reasonable doubt exists as to whether a sample is subject to DOT regulations, the shipper should consult the Hazardous Materials Transportation Coordinator as to the appropriate procedures to follow in the shipment of the sample.

When a sample is not listed in DOT's Hazardous Materials Table, 40 CFR §172.101, it is necessary for a shipper to make a reasonable determination whether the sample is likely to be classified as a hazardous material. The following classes of hazardous materials must be considered and they are listed below in the order of greatest concern, 40 CFR §173.3.

Radioactive material

Poison A

Flammable gas

Non-flammable gas

Flammable liquid

Oxidizer

Flammable solid

Corrosive material (liquid)

Poison B

Corrosive material (solid)

Irritating materials

Combustible liquid (in containers having capacities exceeding 110 gallons)

ORM-B (other regulated material, i.e., barium oxide, calcium oxide, copper chloride)

ORM-A (i.e., dry ice, carbon tetrachloride, chloroform, DDT, dieldrin, formaldehyde, lindane, malathion, naphthalene, vinyl acetate)

Combustible liquid (in containers having capacities of 110 gallons or less)

The above hazards likely to be applicable to NEIC survey samples as defined by DOT regulations are as follows:

Poison A (49 CFR 173.326) - Poisonous gases or liquids of such nature that a very small amount of gas, or vapor of the liquid mixed with air is dangerous to life. This class include the following:

- Bromacetone
- Cyanogen
- Cyanogen chloride containing less than 0.9% water
- Diphosgene
- Ethyl dichlorarsine
- Hydrocyanic acid
- Methyl dichlorarsine
- Nitrogen peroxide (tetroxide)
- Phosgene (diphosgene)
- Nitrogen tetroxide - nitric oxide
- Mixtures containing up to 33.2% weight nitric oxide

Flammable liquid [49 CFR 173.115(a)] - "Any liquid having a flash point\* below 100°C (37.8°F) ... " Some of the flammable liquids listed in DOT's Hazardous Materials are acetone, alcohol n.o.s. (not otherwise specified), benzene, cyclopentane, hexane, ink, methyl alcohol, methyl ethyl ketone, toluene, and xylene.

Oxidizer (49 CFR 173.151) - "A substance such as a chlorate, permanganate, inorganic peroxide, nitro carbo nitrate, or a nitrate that yields oxygen readily to stimulate the combustion of organic matter."

Corrosive materials (49 CFR 173.240) - "A liquid . . . that causes visible destruction or irreversible alterations in human skin

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\* Flash point means the minimum temperature at which a substance gives off vapors which in contact with spark or flame will ignite, 49 CFR 171.8.

tissue at the site of contact, or in the case of leakage from its packaging, . . . that has a severe corrosion rate of steel."

Poison B (49 CFR 173.343) - "Those substances, liquid or solid (including pastes and semisolids), other than Class A poisons or Irritating Materials, which are known to be so toxic to man as to afford a hazard to health during transportation; or which, in the absence of adequate data on human toxicity, are presumed to be toxic to man because they fall within any one of the following categories when tested on laboratory animals:

Oral toxicity ....

Toxicity on inhalation ....

Toxicity by skin absorption ....

Examples taken from DOT's Hazardous Material Table include aldrin, copper cyanide, mercuric acetate, nitroaniline, thiophosgene and zinc arsenate. The foregoing categories shall not apply if the "physical characteristics or the probable hazards to humans as shown by experience indicate that the substances will not cause serious sickness or death."

Irritating Material (49 CFR 173.381) - "A liquid or solid substance which upon contact with fire or when exposed to air gives off dangerous or intensely irritating fumes, such as bromobenzylcyanide, chloracetophenone, diphenylaminechlorarsine, and diphenylchlorarsine, but not including any poisonous material, Class A."

Combustible liquids [49 CFR 173.115(b)] - Any liquid that ... has a flash point at or above 100°F (37.8°C) and below 200°F (93.3°C) ... " Examples of combustible liquids include alcohol-n.o.s., benzaldehyde, camphor oil, chlordane-liquid, creosote-coal tar, fuel oil, pine oil, road oil, and wax-liquid

Etiological agent (49 CFR 173.386) - a viable microorganism or its toxin, which causes or may cause human disease. A "diagnostic specimen" means any human or animal material including, but not limited to, excreta, secreta, blood, and its components, tissue, and tissue fluids being shipped for purposes of diagnosis. The list of etiological agents in the Department of Health, Education and Welfare (HEW) regulations, 42 CFR 72.25(c), includes bacterial, fungal, and viral agents and would cover organisms found in sewage, human and animal waste. Diagnostic specimens of etiological agents are excepted from DOT hazardous materials regulations but HEW requires an etiological agent label to be affixed to all packages which contain etiological agents. However, so long as the shipper does not have reason to believe that viable disease-causing organisms are present in a sample based on the company's NPDES permit and DMR data, then the sample will not be considered an etiological agent. Therefore, the sample will not require an HEW etiological label and may be shipped pursuant to NEIC packing and handling procedures for shipment of non-hazardous samples.

The Clean Water Act (Section 311(b)(2)) requires the identification of hazardous substances which present an imminent and substantial danger to the public health and welfare. DOT has proposed that any substances not previously listed in the Hazardous Material Table be classified as ORM-E. The EPA Safety Manual for Hazardous Waste Site Investigations\* details procedures for transporting unknown hazardous waste materials samples.

#### NEIC Packaging and Handling Procedures for Shipment of Non-Hazardous Samples

The basic guidelines for NEIC packaging procedures meet DOT standard requirements for all packages as specified in 49 CFR 173.24, e.g :

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\* In DRAFT circulation at time of this printing.

Each package . . . shall be so designed and constructed, and its contents so limited, that under conditions normally incident to transportation:

There will be no significant release of . . . materials to the environment.

the effectiveness of the packaging will not be substantially reduced; and

there will be no mixture of gases or vapors in the package which could, through any credible spontaneous increase of heat or pressure, or through an explosion, significantly reduce the effectiveness of the packaging

In addition, shipments by air must meet the requirements at 49 CFR Section 173.6:

Each package . . . shall be so designed and constructed, and its contents so limited, that under conditions normally incident to transportation,

There will be no significant release of . . . materials to the environment.

Inner containers that are breakable (such as earthenware, glass, or brittle plastic), must be packaged to prevent breakage and leakage under conditions normally incident to transportation. These completed packagings must be capable of withstanding a 4-foot drop on solid concrete in the position most likely to cause damage. Cushioning and absorbent materials must not be capable of reacting dangerously with the contents ....

For any packaging with a capacity of 110 gallons or less containing liquids, sufficient outage (ullage) must be provided to prevent liquid contents from completely filling the packaging at 130°F. The primary packaging (which may include composite packaging), for which retention of the liquid is the basic function, must be capable of withstanding, without leakage, an internal absolute pressure of no less than 26 lbs/sq inch or no less than the sum of the absolute vapor pressure of the contents at 130°F (55°C) and,

Stoppers, corks, or other such friction-type closures must be held securely, tightly, and effectively in place with wire, tape, or other positive means. Each screw-type closure or any inside plastic packaging must be secured to prevent the closure from loosening due to vibration or substantial changes in temperature.

Present NEIC custody procedures require samples to be placed in locked metal picnic coolers with hard plastic liners. EPA analytical methods recommend that samples be preserved with ice or below a temperature of 4°C. These must be adhered to in addition to the following packaging procedures based on the above DOT guidelines.

Samples in quart-size and smaller glass bottles should be enclosed in styrofoam packaging and sealed with filament reinforced tape. In the case of the 1-gallon bottles used for non-preserved organic samples, carved styrofoam sheets at the top and bottom will be used to hold the bottle in place. A picnic cooler containing plastic 16-ounce bottles and ice was dropped three times from a distance of four feet and did not experience any leakage nor damage to the inside bottles. This indicates that it affords the type of sturdy protection which is the goal of 49 CFR 173.24 and 173.6. Therefore, 16 ounce polyethylene bottles will be used for samples containing acid preservatives and the bottles will not require additional styrofoam enclosures.

The caps will be tightly screwed on before being placed in the cooler. Small volatile organics glass bottle samples will be placed inside quart cubic containers to prevent breakage. Plastic containers and quart-size glass bottles (enclosed in styrofoam containers) will be put into large heavy-duty plastic bags inside the cooler, ice will be placed around the samples and the bags will be tightly closed. The cooler drainage hole must be secured to prevent leakage. All sides of the cooler will have arrows which indicate the proper upward position of the cooler and a "THIS SIDE UP" sticker will be placed on top. Following these packaging procedures, will minimize to the greatest degree presently possible, any harm which could occur from transportation of NEIC environmental samples in commerce.

## APPENDIX C

### SAFETY PRECAUTIONS WHEN ACCEPTING SAMPLES FROM OUTSIDE SOURCES

In order to minimize hazards to NEIC analytical personnel and to prevent laboratory contamination, procedures for collection and transportation of samples for analysis by the NEIC laboratory are as follows:

1. NEIC will accept potentially dangerous samples only in cases where there has been active participation in the planning and execution of the sampling program by a designated NEIC staff member.\* Such active participation must include full sharing of knowledge relative to process, previous analytical data, and other information relative to the characteristics of the material to be sampled.
2. Samples from municipal sewage treatment plants or the ambient environment will be accepted only after detailed discussion and agreement between the Regional project coordinator and the NEIC Chemistry Branch Chief or his representative. This exchange of information must include a positive sample identification scheme, full discussion of known characteristics of the material sampled, and sample preservation and shipment procedures. Except in emergency situations such agreement will be confirmed in writing by NEIC prior to sampling.

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\* In an emergency precluding participation of NEIC personnel, procedures can be worked out by a telcon

3. Submission of unusual or non-routine kinds of samples, i.e., bag samples of gaseous emissions, core samples from landfills, etc., will be governed by procedures similar to those in item 2 above. However, if there is a possibility of toxic exposure, the procedures in item 1 will be followed.