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EMAIL REGARDING U S EPA REGION IV COMMENTS ON FISH TISSUE SAMPLING AND ANALYSIS PLAN FOR SITE 3 CAUSEWAY LANDFILL WITH ATTACHMENTS MCRD PARRIS ISLAND SC
4/27/2009
U S EPA REGION IV

From: Llamas.Lila@epamail.epa.gov
To: Charlescookk@aol.com; charles.cook2@navy.mil; Sladic, Mark
Subject: Re: Some thoughts on fish tissue SAP
Date: Tuesday, April 28, 2009 10:58:35 AM
Attachments: Field Fish Sampling(512)_AF.R1.pdf

Hi Guys,

I forgot this reference. From our Athens lab. It does not say much, but it does have some references.

(See attached file: Field Fish Sampling(512)_AF.R1.pdf)

See original email for original attachments.

Lila

Lila
Llamas/R4/USEPA/
US
04/27/2009 04:29
PM

To
Charlescookk@aol.com,
charles.cook2@navy.mil,
mark.sladic@ttnus.com

cc

Subject
Some thoughts on fish tissue SAP

Hi Charles and Mark,

I have been promising Charles I would put in writing some initial thoughts on the fish tissue SAP. I have done so, but more in a stream of thoughts than any kind of white paper, just trying to represent all that I have heard from MCRD regarding conditions at Site 3, along with what we know about the fishers.

You may want to read the attached "Emails from John Holloway" file first as background.

I think the most important thing to remember in starting the SAP is that we will likely have two fairly different objectives (Site 3 specific and Overall risk) for the SAP. (See FISH TISSUE SAP SCOPING file). Let's try not to let the 2 objectives bog each other down. I provided a simplified version of each in my notes. However, the Guidance excerpts also give you really good examples.

Also important is selecting the approach to species selection and

sampling. You will see 4 Approaches for species selection outlined here and in the guidance (as well as the basic info on sampling approaches (random, stratified random, etc.)). We can discuss each and see 1) which ones are even feasible, and then 2) which one or two (one per objective) the Navy wants to propose, based on what they are willing to accept (e.g. worse case scenario is simpler, and maybe less expensive, but confining.)

See Fish Tissue SAP Guidance Excerpts file for sections I was using to frame some of these thoughts. Also see Assessing HH Risk...1989 pdf file for full Guidance document.

And let's not forget RAGS and ERAGS for all the good things they offer.

And of course, the National Fish Advisory Guidance previously submitted to you.

Helpful to the forthcoming SAP conversation will likely be the As-Built Survey from the Construction Completion Report (showing the dimensions of the contaminated sediments, compared to non-contaminted areas and the location of the fishing dock respectively). Also helpful to remind us of sampling locations and sediment conditions would be Figures 1 and 2 from the 2002 Post Rod Risk Assessment.

[attachment "Email From John Holloway - MCRD Nat Res Mgr - 4-17-09ish.doc" deleted by Lila Llamas/R4/USEPA/US] [attachment "Fish Tissue SAP Guidance Excerpts.doc" deleted by Lila Llamas/R4/USEPA/US] [attachment "FISH TISSUE SAP SCOPING - 4-21-09.doc" deleted by Lila Llamas/R4/USEPA/US] [attachment "Assessing human health risk...1989.pdf" deleted by Lila Llamas/R4/USEPA/US]

If you need any more specific guidance, let me know.

Talk to you soon,
Lila

P.S. (You will see in my thoughts the portioning of Site 3 contributions based on species foraging/home ranges. If we are gathering this info for the SAP anyway, then I would propose that it may be appropriate to go back and somehow account for ranges and time spent in contaminated areas in the sediment-to-fish estimates in the RA as well.)

U.S. Environmental Protection Agency
Region 4, Science and Ecosystem Support Division
Athens, Georgia

OPERATING PROCEDURE

Title: **Fish Field Sampling**

Effective Date: November 1, 2007	**Number:** SESDPROC-512-R1

Author

Name: Lonnie R. Dorn
Title: Life Scientist
Signature: Lonnie R Dorn Date: 10/31/2007

Approval

Name: Bill Cosgrove
Title: Chief, Ecological Assessment Branch
Signature: Bill Cosgrove Date: 11/2/07

Name: Laura Ackerman
Title: Field Quality Manager, Science and Ecosystem Support Division
Signature: Laura Acker Date: 11/01/07

Revision History

This Table shows changes to this controlled document over time. The most recent version is presented in the top row of the table. Previous versions of the document are maintained by the SESD Field Quality Manager.

History	Effective Date
SESDPROC-512-R1, *Fish Field Sampling*, replaces SESDPROC-512-R0. **General** Corrected any typographical, grammatical, and/or editorial errors. **Title Page** Changed title for Bill Cosgrove from Acting Chief to Chief. **Table of Contents** Renamed Section 1.4, and deleted Section 3. **Section 1.1 and Section 2.4** Deleted reference of this document as an SOP. **Section 1.3** Updated information to reflect that procedure is located on the H: drive of the LAN. In addition, text has been revised in this section. **Section 1.4** List revised to be alphabetical. Citations of SESD procedures not used deleted. Citation of SESD procedure used in this procedure and SHEMP reference added. Section 3 merged with this section. Other changes made to be consistent. **Section 1.5.1** Title of Safety, Health, and Environmental Management Program Procedures and Policy Manual corrected, and citation added. **Section 1.5.2, 5th bullet** Added references to the CFR and IATA's Dangerous Goods Regulations. **Section 2.5** Added referenced procedure. Deleted the term habitat evaluation forms.	November 1, 2007
SESDPROC-512-R0, *Fish Field Sampling*, Original Issue	February 05, 2007

TABLE OF CONTENTS

1 General Information

1.1 Purpose

The purpose of this operating procedure is to describe the process and methods by which fish are collected

1.2 Scope/Application

The methodology, equipment, and sample handling procedures described in this document allow scientist to effectively and efficiently collect fish from freshwater, estuarine and marine environments.

1.3 Documentation/Verification

This procedure was prepared by persons deemed technically competent by SESD management, based on their knowledge, skills and abilities and has been tested in practice and reviewed in print by a subject matter expert. The official copy of this procedure resides on the H: drive of the SESD local area network. The Field Quality Manager (FQM) is responsible for ensuring the most recent version of the procedure is placed on the H: drive and for maintaining records of review conducted prior to its issuance.

1.4 References

SESD Operating Procedure for Logbooks, SESDPROC-010, Most Recent Version.

International Air Transport Authority (IATA). Dangerous Goods Regulations, Most Recent Version

Title 49 Code of Federal Regulations, Pts. 171 to 179, Most Recent Version

United States Environmental Protection Agency (USEPA). 1999. Rapid Bioassessment Protocols for use in Streams and Wadeable Rivers: Periphyton, Benthic Macroinvertebrates, and Fish. Second Edition. EPA 841-B-99-002. Office of Water, Washington, DC.

USEPA. 2000. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories, Third Edition. EPA 823-B-00-007. Office of Science and Technology, Office of Water, Washington, DC.

USEPA. 2007. Safety, Health and Environmental Management Program Procedures and Policy Manual. Science and Ecosystem Support Division, Region 4, Athens, Georgia.

1.5 General Precautions

1.5.1 Safety

All members of the sampling crew should be able to swim and be certified in Cardiopulmonary resuscitation (CPR) as well as first aid. Depending on the Data Quality Objectives (DQO) certain samples may be frozen or preserved with ethanol or formalin. Proper safety precautions must be observed when working with either preservative. Refer to the Science and Ecosystem Support Division's (SESD) Safety, Health and Environmental Management Program Procedures and Policy Manual (USEPA 2007) and any pertinent site-specific Health and Safety Plans (HASP) for guidelines on safety precautions. These guidelines, however, should only be used to complement the judgment of an experienced professional. When using this procedure, minimize exposure to potential health hazards through the use of protective clothing, eye wear and gloves.

1.5.2 Procedural Precautions

The following precautions should be considered when performing fish collections:

- Care in handling of organisms in the collection is necessary so that specimens are not damaged. This includes handling fish with latex gloves and storing fish in a sealed clean plastic bag on wet ice for no more than forty-eight hours before filleting.
- Collected samples for tissue analysis should be stored in a secure location to preclude conditions, such as desiccation, which could alter the properties of the sample. Samples shall be custody sealed during long-term storage or shipment.
- Collected samples are in the custody of the sampler or sample custodian until the samples are relinquished to another party.
- If samples are transported by the sampler, they will remain under his/her custody or be secured until they are relinquished.
- Shipped samples will conform to all U.S. Department of Transportation (DOT) rules of shipment found in Title 49 of the Code of Federal Regulations (49 CFR parts 171 to 179), and/or International Air Transportation Association (IATA) hazardous materials shipping requirements found in the current edition of IATA's Dangerous Goods Regulations.
- Chain-of-custody documents shall be filled out and remain with the samples until custody is relinquished.
- All shipping documents, such as bills of lading, will be retained by the project leader and stored in a secure place.

2 Methodology

2.1 Summary of Procedure

This procedure describes fish sampling techniques and equipment which are designed to minimize effects on the chemical and physical integrity of the sample. The use of collection techniques described below should provide fish that are suitable for use in ecological assessments, Total Maximum Daily Loads (TMDL) and other relevant studies.

2.2 Collection Devices (dependent on DQOs)

- Tote barge electrofisher
- Backpack electrofisher
- Boat-mounted electrofisher
- Seine net
- Dip net
- Gill net
- Hook and line
- Fish traps

2.3 Procedure

Assemble the necessary equipment needed to collect the sample. The physical location where samples are to be collected may dictate the equipment to be used. If tissue samples are required from a wadeable waterbody, backpack electrofishing or seining is possible. Physical barriers could hinder the use of a seine net, making backpack electrofishing a more desirable technique. If the stream is too deep to wade, boat electrofishing, nets or hook and line techniques may be more suitable for collecting the sample. Current velocity and conductivity can determine which technique is best. Because boat electrofishing is more time efficient, it is the preferred method. However, if conductivity of the water at the sampling location has extremely high (>1300 microsiemens [μS]) or low (< 20 μS) conductivity, electrofishing may be ineffective, thus nets or hook and line techniques should be used to collect the sample.

2.4 Quality Control

Assure that samples are properly labelled and preserved. Fish collected for tissue analysis may be stored in coolers on wet ice for no more than forty-eight hours. Fish from multiple collection sites may be stored in the same cooler as long as each sample is stored in a clean separate plastic bag.

A library of basic taxonomic literature is essential in aiding in the identification of specimens. The taxonomic publications in common use should be stored in the fish processing lab. These references are listed in the references section in this procedure. In addition, voucher specimens should be retained for verification from additional sources, if necessary.

2.5 Records

Records generated will include field notes, recorded in a bound waterproof logbook (in accordance with SESD Operating Procedure for Logbooks, SESDPROC-010), field data sheets for physical characterizations, digital photographs, custody tags, completed chain-of-custody forms, lab bench sheets and, if needed, completed receipt for sample forms.