



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
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September 30, 2005

MEMORANDUM

SUBJECT: Region 6 Response to Science Advisory Board (SAB) Review Comments on "Emergency Response Quality Assurance Sampling Plan for Hurricane Katrina Response Screening Level Sampling for Sediment in Areas Where Floodwater Receded, Southeast, Louisiana"

FROM: Carl E. Edlund, P.E., /Signed/
Director
Multimedia Planning and
Permitting Division (6PD)

TO: Kathleen White,
Designated Federal Officer

The Environmental Protection Agency (EPA) Region 6 would like to thank you for coordinating the Public Conference call on September 13, 2005 and assisting with the compilation of the meeting minutes. We would also like to thank the SAB for providing comments and suggestions to the Quality Assurance Sampling Plan. We have taken the SAB comments and suggestions into consideration in our adaptive approach to sample collection in this complex situation. Our responses to the "Summary and Identification of the Most Important Points for the Agency's Consideration" are attached.

Attachment

cc: Larry Starfield
Deputy Regional Administrator
Tim Oppelt
NHSRC. IO
William Farland
ORD, OAA, OSA
Michael Callahan
Region 6 ORA

**EPA's Response to the Science Advisory Board (SAB) Comments
on the
Emergency Response Quality Assurance Sampling Plan
For
Hurricane Katrina Response
Screening Level Sampling for Sediment in Areas Where Flood Water Receded
Southeast, Louisiana**

On August 28, 2005, Hurricane Katrina made a second landfall on the southern U.S. coast, causing massive damage and flooding to broad areas of Alabama, Louisiana and Mississippi. The EPA responded to FEMA's request for assistance with search and rescue efforts as our priority for the first eight days. Following the collection of floodwater samples, the EPA was tasked with writing a Quality Assurance Sampling Plan for sediment sampling on September 6th with sampling to commence on September 10th. A public conference call to discuss the SAB comments was held on September 13th, 1 - 4 pm EST. David Dzombak, chair for the SAB workgroup that reviewed the Sediment/Residue plan and Kathleen White, Designated Federal Officer compiled a "Summary and Identification of Most Important Points for the Agency's Consideration" located at http://epa.gov/sab/05minutes/minutes_residue_sampling_plan_wg_09_13_05_final.pdf.

Charge Question 1: Are the project objectives and the preliminary nature of this Plan clearly stated?

Issue 1a) "Objectives are stated and restated differently within the Plan. Objectives should be made consistent. Moreover, Region 6 needs to carefully consider the scope of the objectives. There seem to be two major, inconsistent objectives. The first and apparently predominant objective is to assess in a preliminary way the kinds of contaminants present in various areas – the "Look See" approach. The second objective is to use that information to evaluate extent of contamination as well as to assess potential for human exposure and associated health risk. These latter objectives are not compatible with the screening nature of the Plan."

Response: Agreed. The objective as stated in the Plan is "to determine the nature and type of contaminants that may have impacted residential areas due to migration of hazardous materials by flood". Should future sampling plans be needed for further studies, we will have the objective stated clearly and consistently throughout the document.

Issue 1b) "There is a danger that the results may be used for purposes much broader than the intended purpose which seems to focus on preliminary investigation. Region 6 should state the limitations very clearly."

Response: Agreed. Since the intended purpose of the data is to make a preliminary assessment, the data is thus not intended for use in long-term risk evaluations. Other limitations of the data will be carefully considered and documented as data results and supporting information are evaluated.

Issue 1c) “The geographic focus for the sampling Plan should be stated very clearly on the first page of the Plan.”

Response: Agreed. The areas of geographic focus of this Plan are areas where floodwaters have receded resulting in sediment deposition. Maps of the flooded areas and receding water areas, along with sediment sampling points are posted and continually updated on the EPA Headquarters web site:

(<http://www.epa.gov/katrina/testresults/sediments/index.html>).

Maps with sampling locations are updated on the Region 6 website:

<http://www.epa.gov/region6/index.htm> .

Charge Question 2: Please comment on the validity of the sampling approach and the adequacy of the methods to accomplish the project objectives.

Issue 2a) “Most of the Workgroup interpreted the sampling Plan as indicating that a single one-square-mile area would be sampled. From our discussions today it is clear that several one-square-mile areas will be investigated. This needs to be clarified in the plan.”

Response: Agreed. The intent of the Plan was to focus on sampling and analysis of sediment samples from individual one-square-mile areas covering areas where sediment was deposited by floodwaters. We have used an adaptive approach in order to respond to field conditions and community input, such as the collection of enough samples to obtain the coverage of 7 to 10 samples per zip code in the New Orleans area. As of 9/26/05, there are 280 sample locations covering 27 zip code areas.

Issue 2b) “Focused sampling in selected one-square mile areas is different than a broader area analysis which would provide more information for scoping purposes. It is recognized that there are practical issues driving the current approach, but the technical, social, and decision making advantages to sampling over a broader area should be considered.”

Response: As the comment response to 2a indicates, samples are being collected throughout the area where floodwaters have receded and deposited sediments. This will provide data that can be used to guide subsequent evaluations of the flooded area. Also see Response to Issue 2a) above.

Issue 2c) “ The Plan involves collection of samples in yards adjacent to houses, that is, all samples will be acquired in the outdoor environment. Different materials may be deposited outdoors compared to indoors (where potential for human exposure is likely to

be greater). Region 6 may wish to consider some indoor sampling, including surface films on walls and structures.”

Response: Because of worker safety issues and the difficult logistical issues that could not be resolved prior to this particular sampling effort, entry into private homes was not initially appropriate. We will revisit this recommendation as these issues are addressed.

Issue 2d) “The Plan should clarify the procedure for duplicate sampling so it is consistent throughout the Plan.”

Response: Agreed. One duplicate is to be collected for every ten samples with an additional sample collected for the remaining fraction of 10 samples.

Issue 2e) “As sediments dry, airborne dusts will be created. Particle size distribution for deposited sediments will provide some information about the amount of sediment mass susceptible to suspension in air flows. Plans for air sampling for particulates should start to be formulated (not for inclusion in the current Plan).”

Response: Air sampling is being done as part of a separate sampling and analysis plan. Although segregating sediment fines from large particle matter would provide additional information as to the character of the sediment, it will not enhance data required to fulfill the objective of the Plan. See response to Issue 4a). See EPA’s web site for air sampling results at: <http://www.epa.gov/katrina/testresults/air/index.html>

Issue 2f) “The biased approach used in the Plan, involving targeting areas suspected to be highly contaminated and/or accessible because of the drawdown of flood waters, is justifiable. Without large additional effort a probabilistic component could be added that would make the data more useful for purposes beyond initial scoping, such as extrapolation for assessment of extent of contamination.”

Response: Sampling in targeted areas agrees with our objective as stated, for a preliminary determination of nature and type of contaminants in sediments in residential areas where floodwaters have receded. Should future sampling plans be needed for further studies, we will add a probabilistic component.

Charge Question 3: *Are the requirements for containers, preservation techniques, sample volumes, and holding times (Table 4-1) appropriate for the listed analyte categories?*

Issue 3a) “Avoid use of glass containers for collection of samples for metals analyses; use plastic, acid washed bottles.”

Response: Appropriate polyethylene jars will be used for the collection of sediment samples for metals analyses.

Issue 3b) “Disinfect equipment between sampling to avoid microbial cross contamination.”

Response: Proper sampling techniques, preparation, quality assurance techniques are used in the collection of samples. Processes used in the field will be documented in the field logbook.

Issue 3c) “Use appropriate containers for VOC samples; the containers specified are incorrect.”

Response: Appropriate containers for VOC samples will be used.

Charge Question 4: *Are the analyte methods to be used appropriate for the matrix being sampled?*

Issue 4a) “It would be useful to wet sieve some sediment samples to isolate the silt/clay fraction, and analyze the contaminants associated with this size fraction, which is likely to drive human health risk assessments. Such data would complement the analyses of the whole sediments.”

Response: Although segregating sediment fines from large particle matter would provide additional information as to the character of the sediment, it will not enhance data required to fulfill the objective of the Plan. The Plan does call for biased collection of finer-grained sediments (see page 5 of the Plan). Air sampling for particulate matter has been added under another program objective. See response to Issue 2e).

Issue 4b) “Direct injection without preparation for organics will limit the usefulness of the data obtained. Region 6 should reconsider whether they are comfortable with the proposed approach for analyzing organics.”

Response: We believe the method is sufficient for the screening assessment described in this Plan. Getting an accurate reading for organics was problematic in some samples due to high concentrations of petroleum. Should future sampling plans be needed for further studies, we will use special laboratory methods for getting lower detection limits.

Issue 4c) “The Plan does not follow EPA analytical guidance in a number of specific points. These decisions were probably made consciously, but have ramifications, and it is important that these be recognized.”

Response: The Plan reflects consideration of appropriate guidance with regard to the application of analytical methodology for sediment samples. Data limitations will be considered as data results are obtained and supporting information is evaluated.

Issue 4d) “TCLP analyses on a subset of samples will start to give Region 6 some information pertaining to management of the sediments after they are removed

from properties.”

Response: TCLP analyses are beyond the scope of this study. The objective of this Plan does not include collection of data for other contaminant issues, e.g. disposal, remediation, etc.

Charge Question 5: The SAB’s advice on constituent analysis would also be appreciated.

Issue 5a) “Region 6 should analyze for a number of individual pathogens in the sediment samples.”

Response: Please see response to comment immediately below.

Issue 5b) “Region 6 should consult with CDC about analyses for pathogens, including which pathogens to target and standard methods for collection, transport, and analysis of samples.”

Response: EPA conferred with CDC on these issues and concluded that for the purpose of our objective, we would continue with fecal coliform analysis.

Issue 5c) “Region 6 will need to give thought to how to interpret the results of the pathogen testing, as there are no defined acceptable limits for pathogens in sediments. Microbiological standards developed for wastewater treatment biosolids used in land application may be of some use.”

Response: EPA will recommend this issue be taken into consideration if future sampling efforts are undertaken.

Issue 5d) “Moisture content of sediment samples should be routinely measured because it affects microorganism viability.”

Response: EPA conferred with CDC on this issue and concluded that for the purpose of our objective the measures of biological contaminants in the environment cannot be interpreted and would not affect any significant decisions regarding sediments at this time.

Issue 5e) “Particle size measurements should be done on a subset of samples to help assess risk.”

Response: Although segregating sediment fines from large particle matter would provide additional information as to the character of the sediment, it will not enhance data required to fulfill the objective of the Plan. See response to Issues 4a) and 2e).

Issue 5f) “Radiological analyses on a subset of samples would provide an initial confirmation of the hypothesis that there is not radiological contamination above

background.”

Response: Radiological issues were not part of the objective of the QASP. The Department of Energy (DOE) has conducted over-flights and extensive searches of the affected areas to evaluate the potential for releases of radiological contamination.

Charge Question 6: Please comment on the adequacy and transparency of the quality assurance plan and the plan for project documentation.

Issue 6a) “Some component of probabilistic sampling along with the biased sampling will make the data more useful for assessing the extent of contamination, exposure assessment and health risk assessment. Such assessments will be needed shortly.”

Response: As clarified in prior responses, the objective of the plan is limited in scope. The purpose of this data is to determine the contaminants present in the sediment. Should exposure and health risk assessments be needed, data quality objectives for those needs will be developed under a separate quality assurance plan.

Issue 6b) “The sampling plan lacks some elements of the Agency's quality assurance guidance as described in document EPA/QA/G-5 Guidance on Quality Assurance Project Plans. It is not necessary that the Plan comply with all elements of the guidance, but the implications of not doing so should be recognized.”

Response: The sampling plan complies with elements of EPA/QA/G-5 with the consideration that the sampling plan was designed as an Emergency Response plan.