

Committer	Date	Comment	Section	Resolution
WDOE	11/30/05	Please conduct a thorough search of those found in the text, adding DMMP, MTCA and (possibly) COI.	Acronyms and Abbreviations.	Noted.
ERDC	12/5/05	<p>Appendix A (General)</p> <ul style="list-style-type: none"> <li>• This list of compounds needs extremely careful consideration before agreement. There are several considerations that need to be made: <ul style="list-style-type: none"> <li>○ Some of the compounds on list 1 and 2 are easily metabolized and rarely found in tissues. This applies to some of the volatiles as well</li> <li>○ Some off the chemicals are emerging chemicals (e.g., PBDE, Chlorinated PAHs, Alkylated PAHs). Chemical analysis may be difficult or impossible. For example, the analysis of alkylated PAHs is difficult because there are no standards. Initial efforts that analyzed these compounds was purely for fingerprinting PAH contamination. This analysis method will not likely meet data requirements of the region.</li> <li>○ Consider the potential for trophic transfer. If the chemical is not toxic to fish, then it could be eliminated from the list if trophic transfer is not likely.</li> </ul> </li> </ul>	Appendix A	<p>Most compounds that are metabolizable are only easily metabolized in some organisms and not others. Compounds such as PAHs are retained on the lists because they are not metabolized by all aquatic organisms.</p> <p>Only the compounds on List 1 are required to be addressed routinely, and none of these compounds are difficult to analyze for or considered emerging chemicals. Some chemicals were placed on List 2 rather than List 1 for these reasons, so that they would only be addressed on a case-by-case basis if highly significant for a specific project.</p> <p>Compounds were placed on List 1 only if there was clear evidence that they were toxic to fish, wildlife, and/or humans.</p>
NMFS	12/5/05	The Kow for bioaccumulation should be $\log_{10}Kow > 2.0$ . For species such as fish, that are likely to have a lipid content of 5% or greater, this Kow would represent a 5x increase in whole-body tissue concentrations over what would be expected for a tissue concentrations equal to the water concentration.	Appendix A	The selection of the Koc cutoff for the bioaccumulation lists was made by the previous interagency/stakeholder workgroup hosted by the DMMP program. The technical basis for its selection can be found at <a href="http://www.nws.usace.army.mil/publicmenu/DOCUMENTS/BCOC_Technical_Appendix_090804.pdf">http://www.nws.usace.army.mil/publicmenu/DOCUMENTS/BCOC_Technical_Appendix_090804.pdf</a> . The Bioaccumulation Subcommittee reviewed the Technical Appendix and endorsed its approach, with one unrelated exception pertaining to metals described in the SEF.
ODEQ	11/30/05	Last sentence: Give a reference for the summary and survey performed by D.M.D.	Appendix A, A-2	There is no separate reference for this work, which was conducted as part of D.M.D.'s participation in the DMMP BCOC Workgroup. The results of their survey is reported in EPA 2004, the Technical Appendix documenting the workgroup's efforts, now referenced in Appendix A.
ODEQ	11/30/05	The last sentence under List 3 says, "List 3 chemicals are presented in Table BCoC3." Do you really mean Table A-3?	Appendix A, A-4	Table references have been corrected.

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		If not, where is Table BCoC3?		
ODEQ	11/30/05	The decon procedures section starts out with "It is also recommended..." Nothing has been recommended yet, so "also" should be deleted.	Appendix B, B-1	Change made as suggested.
ODEQ	11/30/05	2 <sup>nd</sup> paragraph: "...bioassays should be stored at 4/C..." I presume you mean 4° C.	Appendix B, B-4	Change made as suggested.
NMFS	12/5/05	Is the Biological Testing – ESA Concerns (August 2, 2005) white paper going to be included in this appendix? It should be.	Appendix C	
NMFS	12/5/05	<b>Minimum requirements.</b> The SEF represents minimum requirements for the determination of exposure and effects to benthic resources from dredging, disposal, and/or sediment cleanup. The NMFS is particularly concerned that the employment of minimum requirements, as currently described in the SEF, falls short of ESA species' conservation goals and has not reached the point of using the document to streamline subsequent project-level consultations. Because ESA regulations require NMFS to make an independent decision on affects to ESA-listed species and EFH, the SEF document should clarify the regulatory role that NMFS has in relationship to the consensus goals of the RSET process ( <i>i.e.</i> , page 1-II, paragraph b. Decision-making).	Chapter 01	Not addressed. Needs policy committee review.
NWP	12/16/05	Chapter 1: There is confusion about the nomenclature RSET, LDT, RDT, etc. What level does the Regulatory staff speak with? RSET or LDT. It is very unclear how the hierarchal responsibilities work. From 1.6.1(b) it appears that regulatory works directly with the RSET. The RSET should then be regularly available as a team.	Chapter 01	No Change.  Local RSET teams will be available on a regular basis.
WDOE	11/30/05	<ul style="list-style-type: none"> <li>Text in this chapter (and others) focuses mostly on dredging, with few references to sediment cleanup or source control evaluations/ programs. Consequently, the DRAFT SEF has the appearance of being a major revision of the DMEF with some mention of beneficial uses, cleanup evaluations and management alternatives, etc.</li> </ul> <p>The chapter does not clearly establish the authority to regulate or provide guidance on how to evaluate DM/sediment once it is beyond jurisdiction of a Section 10/404 permit, e.g., once it is upland with no return flows.</p>	Chapter 01	No Change.  SEF doesn't regulate upland disposal.
ODEQ	11/30/05	Par. 1: "It is the intention that this SEF..." should be "It is intended that this SEF..."	Chapter 01, 1-1	Change made as suggested.

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		Par. 2: The word basis is singular so "...technical and regulatory basis..." should be "...technical and regulatory bases..."		
ODEQ	11/30/05	Spell out the first usage of DMMP.	Chapter 01, 1-10	Change made as suggested. DMMP was added to acronym list.
ODEQ	11/30/05	We believe that NMFS is now called NOAA Fisheries and suggest using the current name. This should be done throughout the document.	Chapter 01, 1-2	No change. Checked with Cathy Tortorici–NMFS is correct.
ODEQ	11/30/05	Bottom of page: "risk-based framework" should be "risk-based framework"	Chapter 01, 1-3	Change made as suggested.
ODEQ	11/30/05	First bullet: "...on as uniform basis..." should be "...on a uniform basis..."	Chapter 01, 1-8	Change made as suggested.
NWS	11/25/05	<b>Page 1-13, Figure 1-2.</b> Should the term "Tier" be used for the levels in the structure of the RDT? I can see why it's used, but the term could be confusing to document users that are used to this term in the same field but a different context. Especially when you're trying not to use the term relative to the previously understood context. Alternative suggestions: "rung," or something like "action level" "oversight level" "management level" and "administrative level."	Chapter 01, Figure 1-2	Policy Committee Question.
NMFS	12/5/05	As mentioned above, this program should be determining the potential risk to resources and habitat of dredging the material, not just where the dredged material is proposed to be deposited.	Chapter 01, Page 1-1, last paragraph	Changed (sort of).
WDOE	11/30/06	The overall process is flawed if States do not have equal representation and/or empowerment at the highest levels of the RDT, e.g., Executive Steering Committee.	Chapter 01, page 1-10 to 1-11; and figure 1-2	Policy Question. Mirrors the National Structure.
WDOE	11/30/05	There needs to be greater consistency in the references made to OMC versus NSC as the body that resolves controversial issues (e.g., those not resolved by RSET).	Chapter 01, page 1-11, page 1-15, section 1.6.5 and page 1-16	Change made as suggested.
NMFS	12/5/05	One title for NMFS should be used in this figure.	Chapter 01, Page 1-13, Figure 1-2	Change made as suggested.
WDOE	11/30/05	This figure should be accompanied by one representing the organizational structure for making decisions on sediment evaluations for the purpose of cleanup or source control	Chapter 01, page 1-13, figure 1-2	Not changed.
WDOE	11/30/05	Because the SEF is not merely a revision of the DMEF but	Chapter 01,	No change. The SEF is guidance, not regulation.

Commenter	Date	Comment	Section	Resolution
		was expanded to include sediment cleanup evaluations, Ecology must evaluate the need for the RSET and the SEF to comply with requirements of SEPA. Ecology will consider signing the FINAL SEF if it is found not to conflict with State regulations/rules or otherwise diminish State authorities and that this is clear from the text.	page 1-16, last paragraph	Need for SEPA is an Ecology call
NMFS	12/5/05	Does this SEF manual supplant these other manuals?	Chapter 01, Page 1-2, Section 1.2	Yes and No. This SEF supplants the DMEF.
NMFS	12/5/05	NMFS disagrees with the last paragraph of this section, particularly the second to last sentence. As it is written, this manual does not address the management options for cleanup sites. These sites are frequently complicated, often with upland sources. The Regional Dredging Team (RDT) should consider removing most references to sediment cleanup from the SEF. If sediment cleanup is retained, it should be treated very simply. The acknowledgement of the relevance of the SQGs to contaminated sediment cleanup should be made, but the SEF should not attempt to duplicate or overarch existing state and Federal cleanup authorities, rules, regulations, or guidance.	Chapter 01, Page 1-3, section 1.2, last paragraph	Last two sentences of paragraph changed Not intended to replace other laws/ regulations
ODEQ	11/30/05	The first sentence in the first full paragraph mentions that the appendices provide additional technical support. It would be helpful to include an appendix that lists existing disposal sites along with their location and what quality of materials they accept. (An agreement was made at a RSET meeting (policy group?) that such an appendix would be added.)	Chapter 01, Page 1-5	Policy Committee question Steph will develop.
ERDC	12/5/05	Did the public have input to this process, outside the Ports?	Chapter 01, Page 1-5, 1.4	Yes. No change.
USFWS	12/21/05	Add "...or are mandated to minimize adverse impacts to natural resources of importance to the public."	Chapter 01, Page 1-5, 2 <sup>nd</sup> paragraph under "(1)" at the end of the first sentence	No change. Comment was unclear.
NMFS	12/5/05	If new information is available, and the manual is not updated, the agencies can request modifications to sampling, analytes, tests, criteria, etc.	Chapter 01, Page 1-5, section 1.3, last para	Agree, but not added to text.
NMFS	12/5/05	Framework objective number (3). Should this be "It establishes a uniform framework for evaluating <i>effects</i> of	Chapter 01, Page 1-6	Change made as suggested.

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		sediment management activities on water quality?"		
NMFS	12/5/05	NMFS believes that this section also applies to State cleanup actions as well as for Comprehensive Environmental Response, Compensation, and Liability Act sites.	Chapter 01, Page 1-6	Agree.  No change. Language was from EPA Superfund
NMFS	12/5/05	Framework objective number (4). "It establishes appropriate databases to track the long-term trends in sediment quality of specific dredging projects/locations and the river in general." This is a great idea, however details of this effort are summarized in one small paragraph and the feasibility of its implementation cannot be gauged. How will this database be created and will the general public and regulatory managers have access? What cooperation will be needed and what reporting requirements and incentives will be given to those that participate	Chapter 01, Page 1-6	See Chapter 12.  Chapter 1 is an overview.
ERDC	12/5/05	Need to update reference for SETAC workshop. It is a book now.	Chapter 01, Page 1-7	No Change.
NMFS	12/5/05	The last sentence on the first paragraph "Beneficial uses such as wetland creation and beach nourishment are desirable management actions." seems out of place and lacks context.	Chapter 01, Page 1-7	Change made as suggested.
NMFS	12/5/05	The statement of "minimum requirements" is very different from the information presented earlier, in which the reader is lead to believe that compliance with SEF would satisfy all state and Federal laws. How is "minimum requirement" defined? This needs to be re-evaluated in the context of ESA.	Chapter 01, Page 1-7	Means that at least this level of review is required.  No change.
ODEQ	11/30/05	The last paragraph mentions the change from a 4-tier system to a 2-tier system and describes it as a "significant" change. We believe that this is more of a procedural change than a substantive change.	Chapter 01, Page 1-7	Disagree.
USFWS	12/21/05	Add "Fish and Wildlife Coordination Act (FWCA)" to the existing list of legislation	Chapter 01, Page 1-7, section 1.5	Change made as suggested.
NMFS	12/5/05	The definitions of 'consistent' and 'revisable' seem to contradict each other and need clarification. These characteristics are quite contradictory, especially 'consistent' and 'flexible.' The solution is to combine these into one characteristic that is a balance between consistency and flexibility.	Chapter 01, Page 1-8, section 1.5.1	No change.  One is project specific.  Revisable refers to the overall approach.
NMFS	12/5/05	"Statistical significance is used to determine if observed differences are "potentially real" when natural variability of	Chapter 01, Page 1-9	Don't understand the comment. No change.

Commenter	Date	Comment	Section	Resolution
		the parameters being measured is considered.”		
WDOE	11/30/05	Language on “flexibility/management by exception” must not be interpreted in a manner that diminishes State authorities. Please make this clear. Last para. It is Ecology’s perception that “port authorities” played a somewhat limited role in developing this DRAFT SEF.	Chapter 01, page 1-9, 1 <sup>st</sup> paragraph	Ecology’s perception is wrong. Port of Portland participated; WPPA and Ports of Seattle and Tacoma were invited, but did not attend most meetings.
ERDC	12/5/05	Page1-4, Para 3. Biological testing of sediment ...” this statement suggests that the multiple lines of evidence approach is not being used. In the MLE approach, all data is used in the end to make a collective decision.	Chapter 01, Page1-4, Para 3	
NMFS	12/5/05	Can be eliminated. It is redundant.	Chapter 01, Pages 1-9, 10, Section 1.6	Disagree.
Port of Portland	11/10/05	If adopted by all of the proposed signatory agencies, the SEF guidelines are meant to “ensure consistency in evaluation among the various programs that regulate sediment.” However, there has been little or no discussion in this draft of how regulatory certainty for dredging projects will be maintained in the meantime, or how RSET will adapt and work with agencies that do not adopt the SEF, or are reluctant to do so. Such a discussion may not be appropriate for this document, but it is increasingly a concern of the Port’s.	Chapter 01, Section 1.1	Noted.
NMFS	12/5/05	Section 1.3, first sentence. It is clear in this section that the consistency analysis has not been done. The potential exists for readers to think two things: (1) That if they follow the SEF that they have complied with all laws; and (2) that no additional work or permits are needed. The potential for that misinterpretation should be corrected.	Chapter 01, Section 1.3, first sentence	
Port of Portland	11/10/05	Objective (3) states that “waterway quality requirements in a bi-state waterway must be uniform” in order to work effectively under Section 401(a)(2) of the Clean Water Act. The Port agrees with this statement. However, content later in the draft indicates that this uniformity has not been achieved between Oregon and Washington in the Columbia River. The Port believes that continued lack of agreement on bi-state waterway water quality requirements will limit the effectiveness of the SEF, and that as a result, regulatory requirements for sediment management activities such as dredging will continue to be unnecessarily complex and costly when working in the Columbia River. The Port recommends that this issue be addressed by the respective	Chapter 01, Section 1.4	Policy Committee Question.

Commenter	Date	Comment	Section	Resolution
		<p>state agencies, that the agencies come to clear agreement on the necessary levels of protection within the system so that requirements can be easily described and implemented, and that this issue be resolved before the SEF is finalized.</p> <p>Similarly, objective (4) refers to appropriate databases to track long-term sediment quality trends. The Port supports this concept, and believes that a comprehensive database for sediments and other geochemical constituents within the system (e.g. turbidity) would assist in appropriate and informed risk management. However, the draft SEF does not specify any mechanisms by which these databases would be created, maintained, and be made available to the public. The Port recommends that responsibility and accountability for creating, maintaining, and otherwise managing these databases be fully described in the SEF.</p>		Sedqual will be used. See Chapter 11.
ERDC	12/5/05	The bulleted characteristics need to be carefully written. Some of them are redundant (Objectives and Understandable) and may need additional explanation.	Chapter 01, Section 1.5.1	No change.
Port of Portland	11/10/05	<p>The SEF states that <i>“the need for, and cost implications of, evaluation procedures must be justifiable to the individual stakeholders/permittee and to the public”</i>. This is the only reference to public accountability within the SEF. The Port agrees with the SEF on the necessity of justifying the need and cost implications for evaluation procedures. The Port is unaware of any studies showing cost implications of evaluation procedures. The Port recommends that the RSET develop a study showing costs of dredge permitting activities, including costs for evaluation procedures, so that all costs are well-understood in the complete regulatory context. The Port would be happy to participate in such a study.</p> <p>The statement is made that the SEF will be revised periodically. However, no process, including schedules, triggers, or funding mechanisms, is set forth to ensure that periodic revision occurs. The Port recommends that a clear and well-defined schedule process for review and revision be put forth in the SEF. The Port believes that inclusion of a clear schedule and process for revision will help ensure that the SEF is reflective of current understanding of the state of sediment science and associated technical issues, and</p>	Chapter 01, Section 1.5.1	<p>Cost is considered in evaluation procedure selection, but is not the only factor.</p> <p>There is no money for a study.</p> <p>Policy Committee Question</p> <p>Steph will revise section 1.6.3.</p>

Commenter	Date	Comment	Section	Resolution
		remains consistent with the processes and regulations of the various participating regulatory agencies.		
EPA	11/14/05	<b>Page 2-2, Section 2.2.2, first paragraph:</b> Revise first sentence of Section to read, “ which requires a permit from the Secretary of the Army for work and construction of structures in navigable waters, and Section 404 of the Clean Water Act (CWA) for the discharge of dredged or fill material into the waters of the United States.” (Eliminate paragraph break) “When a project requires a permit under both Section 10 and Section 404, one application is processed concurrently as a single 10 / 404 permit, such as when dredging and disposal / filling are both necessary ...”	Chapter 02	Change made as suggested.
IDEQ	12/1/05	Section 2.6 should include the Idaho Department of Lands who administers the Lake Encroachment permit program and Idaho Department of Water Resources who administers the Stream Channel Protection Act also have authorities over certain dredging activities.	Chapter 02	Change made as suggested. Added as Section 2.6.2.
IDEQ	12/1/05	The explanation of the 401 certification program should include a discussion of sediment as a 303(d) listed pollutant in streams, or <u>TMDL sediment loading allocations for water bodies</u> (court ordered and required of DEQ) and TMDL implementation plans. Although implementation is a voluntary program, they are assigned to and carried out by Idaho Designated Management Agencies.	Chapter 02	Policy Committee Question  Do we want to add TMDLs?  Steph will add a comment re TMDL, and 303d
IDEQ	12/1/05	There is no discussion of the mixing zone policy for dredging projects, or mention of the Water Quality Standards. Even though Idaho doesn't have sediment standards, it does have water column quality numeric standards. This issue came up in Lewiston when the Corps found ammonia in sediment testing in preparation for dredging. We didn't know the effects to the water column when these sediments were disturbed and whether there would be water quality standards violations, so we required them to monitor for ammonia. There should be mention of our authority to require water quality monitoring & testing during dredging projects (of the disturbed sediments) and affects to the water column.	Chapter 02 Chapter 11	Good Comment –  Not yet added. Do we want to add in language for all states?  Talk to Doug
IDEQ	12/1/05	If there is land application of dredged sediments, the DEQ regulates fugitive dust emissions in Idaho. Requirements are outlined in DEQ's Rules for the control of Air Pollution in Idaho (IDAPA 58.01.01.650-651).	Chapter 02	Added.
IDEQ	12/1/05	No mention of DEQ rules & authorities for land application of	Chapter 02	Added.

Commenter	Date	Comment	Section	Resolution
		waste materials/sediments. The document should contain some language and reference the DEQ Land Application rules for waste materials.		
NMFS	12/5/05	The paragraph that begins "NMFS and FWS share responsibility for implementing the ESA" should be moved in front of section 2.2.6 Marine Mammal Protection Act, to follow the paragraph which addresses the ESA.	Chapter 02, Page 2-6	Change made as suggested.
ODEQ	11/30/05	I couldn't figure out from the text or from Figure 2-1 what "baseline of the territorial sea" means. Also, shouldn't the border between Coastal Waters and Open Ocean be parallel to and just as convoluted as the coastline?	Chapter 02, 2-1 and 2-2	Graphic updated.
ODEQ	11/30/05	This is a figure that we submitted. We would like to change all three uses of "Upland Disposal" to "Nearshore or Upland Disposal."	Chapter 02, 2-11	Figure was updated; however, this changes was not made.
ODEQ	11/30/05	2.5.6: DEQ should be ODEQ.	Chapter 02, 2-12	Change made as suggested.
ODEQ	11/30/05	Section 404: Why is "Guidelines" capitalized? It does not appear to be a formal name of any document. It just refers to the fact that EPA developed guidelines. This appears at least 6 times in this section. I would make it lower case.	Chapter 02, 2-3 and 2-4	It refers to a specific document. It's a proper name. No change.
ODEQ	11/30/05	Sentence 3 under 2.2.4: This is a sentence fragment. I suggest that you attach it to the next sentence or fix it in some other way. As is it says nothing.  Last sentence: Change "considered waived" to "assumed."	Chapter 02, 2-5	Change made as suggested.  Change made as suggested.
WDOE	11/30/05	The State of Washington's Solid Waste rule (WAC 173-350) should be described here	Chapter 02, end of page	To Ecology.
NWP	12/16/05	Figure 2-2 seems to put obtaining a Corps permit prior to sampling and analysis. Maybe that block should read "Obtain COE and DSL permitting requirements and WQC requirements, if necessary"	Chapter 02, Figure 2-2	The sample collection step has been moved so that it now comes after contacting agencies for information and before obtaining permits.
NMFS	12/5/05	This figure speaks to the Oregon Department of Environmental Quality's (ODEQ) relationship with other state and Federal programs. Where do the ESA, Magnuson-Stevens Sustainable Fisheries Act, and the Marine Mammal Protection Act fit into this figure?	Chapter 02, Page 2-11, Figure 2-2	The title of the figure is misleading. It has been changed to "The Role of DEQ's Solid Waste Permits in the Disposal of Dredged Sediment." The text above the figure has also been changed.
NMFS	12/5/05	Is it correct that WQC in middle box means "Water Quality Criteria?" Is this defined earlier? It should probably be defined in the figure.	Chapter 02, Page 2-11, Figure 2-2	The acronym WQC means Water Quality Certification. The acronym has been replaced by the full name.
Port of Portland	11/10/05	The flow chart should start with "Dredging need identified" as opposed to "decision made to dredge" since a decision to	Chapter 02, Figure 2-2, flow	The text in the opening box has been changed to "Dredging need identified."

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		<p>dredge is in many cases dependent on sediment characterization and disposal options (and cost), which are not dealt with until later in the process and chart.</p> <p>This flow chart appears inconsistent with other sections of the SEF. The flow chart suggests that the applicant contact DEQ, COE and DSL separately, as opposed to through a central point-of-contact at the RMT, as stated in other sections of the SEF.</p> <p>It is also unclear whether the process of sediment testing and characterization is to be conducted as part of the permitting process, as suggested/stated elsewhere in the document or instead is to be conducted after obtaining the needed permits as depicted in this chart.</p> <p>The box/question "Sediment contaminated?" should be clarified. As this box is located in the flow chart at the decision point between upland and in-water disposal, the difference between upland and in-water criteria for contamination should be addressed, as the answer can in certain cases be "yes" to one and "no" to the other set of criteria. As with in-water disposal, different types of criteria are being used for upland uses.</p> <p>The chart does not address beneficial use; beneficial use should be integrated in the decision process and should be part of the flow-charts.</p>	chart	<p>The text has been changed slightly to say that you need to obtain the permit and sampling requirements for these agencies rather than to contact these agencies.</p> <p>The sample collection step has been moved so that it now comes after contacting agencies for information and before obtaining permits.</p> <p>A flow chart is not the place to describe the difference between upland and in-water criteria. The requirements are described in the relevant documents which are to be obtained in an earlier step.</p> <p>Beneficial use does not play a role in the determination of solid waste requirements in Oregon.</p>
EPA	11/14/05	<b>Page 2-2, Section 2.1, last paragraph:</b> Revise last sentence in the first paragraph to read, "NEPA acts as an umbrella authority that ensures all Federal agencies must consider the environmental consequences of their dredging projects to the public."	Chapter 02, Page 2-2	Change made as suggested.
EPA	11/14/05	<b>Page 2-3, Second paragraph:</b> Revise second sentence to read, "Though the Corps does not issue itself a permit, the Corps must still meet the requirements of the Rivers and Harbors Act and the CWA; these same regulations govern ..."	Chapter 02, Page 2-3	Change made as suggested.
EPA	11/14/05	<b>Page 2-3, Third paragraph, Section 10:</b> "...with no return flow and no disposal of dredged material into waters of the United States ....."	Chapter 02, Page 2-3	Change made as suggested.
ODEQ	11/30/05	Bottom of first paragraph after the numbered items: It says	Chapter 02,	Change made as suggested.

Commenter	Date	Comment	Section	Resolution
		that when there is no aquatic disposal the Corps' decision to issue a permit is based solely on public input. However, it should be stated that this permit is also based on input from the state in cases where a solid waste disposal permit or permit exemption is required for the disposal of the sediment nearshore or upland.	Page 2-4	
EPA	11/14/05	<b>Page 2-4, Section 2.2.2, first complete paragraph on page 4 last sentence:</b> add "(Section 10 permit authority only) "	Chapter 02, Page 2-4	Change made as suggested.
NMFS	12/5/05	The following is an incomplete sentence in the middle paragraph "Coastal Programs Division (CPD) within the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resource Management."	Chapter 02, Page 2-5	Change made as suggested.
EPA	11/14/05	<p><b>Page 2-6: Endangered Species paragraph:</b> This is a significant part of environmental compliance for most in-water projects in the region covered by this framework. We would strongly recommend that some language be added here about project specific ESA requirements that proponents would have to comply with. Below we attach suggested "off-the-cuff" language, simply a proposed addition, or a start of one.</p> <p>Such language could include, "ESA requires the lead Federal agency for an action (the Corps as permitting agency or as proponent for most Federally funded dredging projects; EPA for designation of ocean disposal sites) to assess the impact of their actions on threatened and endangered species, as well as on the habitat of such species. The Federal agency may find that its actions have no impacts ("no effects"). In such a case, no further action is necessary. The Federal agency may also initiate "informal" consultation with the listing agency (the U.S. Fish and Wildlife Service or National Marine Fisheries Service as appropriate) to obtain concurrence with their assessment that any impacts that may affect threatened or endangered species are "not likely to adversely affect" those species or their critical habitat. The Federal agency can also open formal consultation with the Service(s) and prepare a Biological Assessment on the impacts to listed species or habitat. The Services must prepare a Biological Opinion with an effect determination. The effect determination may include conservation measures or changes in project design</p>	Chapter 02, Page 2-6	<p>Needs Revision</p> <p>Steph and Cathy and Greg will work on this</p> <p>Do we want to add in the graphic here?</p>

Commenter	Date	Comment	Section	Resolution
		that the lead Federal agency may be required to adopt to avoid jeopardy to listed species and ensure compliance with ESA. The effect determination and consultation process if appropriate must be completed before a Corps permit is issued.”		
ODEQ	11/30/05	It would be helpful if additional information were provided under section 2.2.5 to explain how the ESA affects dredge projects.	Chapter 02, Page 2-6	
USFWS	12/21/05	Move 2 <sup>nd</sup> paragraph under section 2.2.6 to the last paragraph of the previous section	Chapter 02, Page 2-6	Change made as suggested.
EPA	11/14/05	<b>Page 2-7, Section 2.4.1; Page 2-10, Section 2.5.2; Page 2-12 (Section 401 Certification Program);</b> A sentence should be added after the second sentence, first paragraph in both locations (at least Washington does this automatically) to the effect that, “Receipt of a Section 404 permit application by the Corps automatically triggers Ecology’s (ODEQ’s?, IDEQ’s?) 401 certification process. If a full 404 public interest review is required, the public notice also automatically serves as a 401 certification notice.”	Chapter 02, Page 2-7 Page 2-12	
ODEQ	11/30/05	Please provide a better explanation of the material in the last sentence in section 2.2.8. Describe the “NEPA document.” Also, is it always assumed that the granting of a CWA Section 404 permit means that you are in compliance with NEPA?	Chapter 02, Page 2-7	
ODEQ	11/30/05	The sentence right above section 2.4.2 says “These conditions may be accepted by the Corps ...” Does this mean that the Corps may NOT accept such conditions from EPA in a 401 certification?	Chapter 02, Page 2-8	Yes.
WDOE	11/30/05	This section should be preceded by one describing the Model Toxics Control Act (MTCA) as a) the State regulation governing all remedial actions and b) the “parent” regulation that effectively refers to the SMS rule for details on sediment cleanup/source control evaluations/programs and PSSDDA guidelines for navigation dredging	Chapter 02, page 2-8, section 2.4.4	Added as Section 2.4.4 and SMS becomes section 2.4.5.
ODEQ	11/30/05	A section on upland disposal requirements should be added to the WA state regulations in section 2.4.	Chapter 02, Page 2-9	To Ecology.
Port of Portland	11/10/05	Section 2.5.5 outlines Oregon’s solid waste permitting process, and its applicability to sediments. The Port has previously stated its disagreement with Oregon DEQ’s statements that all dredged sediments are solid waste, regardless of physical or chemical characteristics. The DEQ has stated that this assumption generates the need for a	Chapter 02, Section 2.5.5	Being argued in other venues.

Commenter	Date	Comment	Section	Resolution
		<p>solid waste exemption even for non-contaminated sediments, and that the current exemption process for solid waste disposal site permitting is “unduly burdensome and costly to the regulated community in relation to the very low environmental impact posed by” clean dewatered sediments. The Port has publicly commented on DEQ’s assessment, and has also commented on DEQ’s recognition that the current process of assuming all sediments are solid wastes and thus requiring a permit exemption to place dewatered sediments anywhere upland, is a burdensome and costly activity for materials that pose no or very low risk of environmental or human health impact.</p> <p>The RSET should consider that additional regulatory burdens are derived from classifying sediments as waste, as described by the DEQ. Classification of dewatered sediments as solid waste triggers land use and zoning implications due to municipal regulation of “waste-related” type activities. Such classification also severely restricts upland sites where such materials can be placed and significantly increases the likelihood of sediment material disposal in landfills, thereby adversely impacting long-term landfill capacity. Moreover, such classification triggers tax and fee burdens that significantly increase the cost of marine facility maintenance and operation. In many cases, there is no environmental impact from these sediments and their placement should not be regulated.</p> <p>The Port does not believe that the characterization in the SEF of sediments as solid waste contributes to the SEF objective of clarifying the regulatory process, reducing the burden on agencies or the regulated community, or of attaining regional consistency in approaches to management of sediments. The characterization of sediments as solid waste has a large impact on the Port, other Oregon ports and private terminal and marina operators by increasing the amount of testing, handling and agency process required to manage dredged materials that have minimal environmental impact. The Port believes that characterization of all dredged sediments as solid waste will not help the regulated community, and will further restrict the placement of and beneficial uses of dredge materials with</p>		

Commenter	Date	Comment	Section	Resolution
		no resulting additional environmental protection. By classifying clean sediments as waste, a useful natural resource is effectively turned into a waste product.		
IDEQ	12/1/05	When RSET evaluates a proposed project we suggest that they include the state regulator in charge of the subject project in team discussions.	Chapter 03	Clarified.
NMFS	12/5-5	This chapter is confusing regarding the relationship between the RDT and RSET. If RSET will replace the RDT, that needs to be made clear; perhaps at the end of the first paragraph in section 3.2. Another sentence that needs to be clarified is the second sentence under section 3.5 "Eventually, the RDT expects..." it sounds like there will continue to be an RDT. If so, how does their role differ from RSET?	Chapter 03	Clarified.
NWP	12/16/05	How long does the RSET have to review and approve or make recommendations on the SAP. It is recommended that this timeframe be no more than 30 days.	Chapter 03	Time frames added.
NWP	12/16/05	Approval of the data and determination of suitability is done by the RSET, then submitted to agencies for review and concurrence. How long would that take? Who would have signature authority on the suitability determination? It is recommended that the entire review and decision take no longer than 30 days, unless the Regulatory staff is notified of reasons for delay. Acceptable reasons for delays could be 1. the data show high levels of contamination and extra time is needed for evaluation; 2. the data show conflicting results and are difficult to interpret.	Chapter 03	Time frames added.  Beta test is underway with specific guidelines for Portland. Seattle already has guidelines.
NWP	121605/0511	Regulatory needs to have time frames associated with each step within the process. It is suggested that Interim Procedures developed in May 2004 be used as a starting point for developing these timeframes and operating procedures. This could be attached as a Non-Public compendium.	Chapter 03	Change made as suggested.
ODEQ	11/30/05	The section that deals with the Sampling and Analysis Plan needs more details. It would be helpful to provide approximate timelines for the activities as well as clarify what agencies review the document.	Chapter 03	Change made as suggested.
Port of Portland	11/10/05	In order to be useful for applicants, the description of the regulatory process and sediment evaluation should include clear and well-defined measures of performance and statements of accountability, such as timelines and response times. For an applicant to plan and prepare a	Chapter 03	Change made as suggested. Time Frames specified.

Commenter	Date	Comment	Section	Resolution
		<p>(dredging) project, the applicant needs to be able to know process timelines. The Port recommends that the SEF include maximum response times for agency review for all parts of the process. In particular the Port asks that the SEF establish clear timelines and management accountability for the RMT. For the SEF process to meet its goals and objectives, the Port believes that it is essential that strict timelines for most process steps be defined.</p> <p>The Port believes it's extremely important to have the permit approval decision as quickly as possible after characterization of the sediments to preserve to the maximum extent possible the relevance of the SAP and the sediment characterization. Sediment movement and deposition is subject to forces of nature. Typically, the winter and spring seasons are when river flows are higher and sediments are more likely to be transported, potentially creating the shoaling in navigation areas that would trigger the need for dredging.</p> <p>When inadequate navigation depth is identified by hydrographic survey or other means, applicants must begin to address the dredging need. A minimum of eight months is frequently needed for putting documentation together, for the SAP approval process, for collecting and analyzing sediment samples, permitting, etc. Since in-water work windows limit dredging to just specific months of the year, any component of the schedule that adds length and/or uncertainty to the process has the potential of pushing the dredging timeframe further out, potentially missing the next available in-water work window.</p> <p>The more time that elapses between identification of need, sampling, and a dredging event, the more probability that nature will move additional sediments, changing the parameters defined in and per the SAP. This is especially relevant if the timelines prohibit the applicant from performing dredging before the next winter/spring river flows. Although this issue may not be applicable to all situations, a reasonably quick processing time is likely to benefit most or all applicants.</p>		

Commenter	Date	Comment	Section	Resolution
		Both the applicant and the regulatory agencies have the responsibility to ensure that the permitting and sediment characterization are applicable to the proposed action. If timelines of the required process are too lengthy or are not adhered to as planned, nature's course is likely to reduce or diminish the applicability of the SAP and the data collected in accordance with the SAP.		
ODEQ	11/30/05	In par. 2 in 3.2, the three processes would stand out better if they were shown as bullets.	Chapter 03, 3-1	Change made as suggested.
ODEQ	11/30/05	Has "local RSET" been defined anywhere?	Chapter 03, 3-2	Yes.
ODEQ	11/30/05	First bullet on this page: "The permit approval process includes consultation with other Federal actions..." Do you mean Federal "agencies" instead of "actions?"]  Section 3.5: Revise "...other agency programs will tap the collective expertise of RSET..." to "...other agency programs will work with RSET..." The wording in this document should be as simple and direct as possible.  Last paragraph: Has "RSET State Team" been defined? As the paragraph continues, does RSET now refer to the State Team or to the whole RSET? It's a little confusing.	Chapter 03, 3-4	Change made as suggested.  Change made as suggested.
ODEQ	11/30/05	Figure 3.2: The arrow between Submit SAP to Corps and the box above is pointing the wrong way and the N arrow on the "Suitable for" diamond is a dead end. Either give it a place to go or, preferably, drop it altogether.	Chapter 03, 3-5	Change made as suggested.
ODEQ	11/30/05	The last paragraph of section 3.5 should be the first paragraph.	Chapter 03, 3-6	Change made as suggested.
NWP	12/16/05	In Figure 3-2 it appears that the first steps are done by the applicant in coordination with the RSET. Is RSET going to be available to walk applicants through the process? I frequently spend hours talking with an agent preparing a SAP, helping them understand the process and getting their draft SAP prepared. Is the RSET going to provide that guidance? If so how? It seems when the SAP gets prepared, the Corps is brought into the process and submits the SAP to RSET formally. It seems incongruent that the Corps should be brought into the process to only provide formal submittal of the SAP. This seems like an unnecessary step. Either the Corps (Regulatory) should be working with the applicant during the first steps and then submit the SAP, much as we do today, or the RSET should	Chapter 03, Figure 3.2	Still being worked.  No change.

Commenter	Date	Comment	Section	Resolution
		do the coordination through the approval of the SAP, then hand it to Regulatory. Conversely, Regulatory could have a representative on the RSET that would work with the team on individual projects to shepard them through the process. Again, established timeframes are a must.		
ERDC	12/5/05	Figure 3-1. The box for RSET review needs an outlet.	Chapter 03, Figure 3-1	Change made as suggested.
NWP	12/16/05	<p>I have concerns regarding the Figure 3-1. It appears that the applicant is required to contact the RSET. Would a POC for the team be established or is the applicant required to contact each member individually? If individual contact is proposed, doesn't that leave open the possibility for varying guidance depending on the agency perspective? I would suggest that the RSET set specific meeting times and that proposed projects be presented to the team. Based on the number of PDX Regulatory applications for dredging, I would suggest that the RSET meet at least every other week to start with, adjusting the time based on demand.</p> <p>It appears the application is to be submitted concurrent with contacting the RSET. Timeframes for the RSET to provide feedback and/or approval should be established and followed. It would be helpful is NWD would provide written guidance on the definition of a complete application for dredging projects.</p>	Chapter 03, Figure 3-1	Under development
Port of Portland	11/10/05	<p>Flowchart Figure 3-2 asks, "Is the project within/near a clean up site?" There appears to be no definition or reference to the terms, although these are crucial elements/information to make that determination. The responsibility for making this determination is also unclear.</p> <p>Similarly, if sediments are not "suitable for evaluation under SEF"; the out-arrow on the chart seems to point to nothing. The same occurs with the other end of the process: the box "Suitability review" has no outcomes or follow-up. The function of this step is not well-characterized.</p> <p>In the second to last paragraph of 3.5, it is stated that "RSET reviews the adequacy of the information and prepares a suitability determination, and then sends it for review and concurrence by the agencies that developed and approved this SEF." The Port agrees that oversight of</p>	Chapter 03, Flowchart figure 3-2	<p>Steph will fix</p> <p>Arrow removed.</p> <p>Steph will change to include elevation process.</p> <p>Page 3-5 last two paragraphs need rewriting. Seems redundant.</p>

Commenter	Date	Comment	Section	Resolution
		RSET by participating agencies is necessary. However, the SEF should further characterize the processes that should occur when individual or multiple agencies disagree with RSET. In particular the Port recommends clear timelines and accountabilities be included for this process.		
ODEQ	11/30/05	3.1, first sentence: What does "... and project approval" mean? Please delete this phrase.	Chapter 03, Page 3-1	Change made as suggested.
WDOE	11/30/05	This statement is not true - see P 3-8, Section 3.9.	Chapter 03, page 3-1, 2 <sup>nd</sup> paragraph, last sentence	Disagree. Any permitted action gets RSET review.
WDOE	11/30/05	It is not clear what role RSET has in "determining the appropriate sediment evaluation approach" for cleanup sites being investigated under MTCA/SMS.	Chapter 03, page 3-1, section 3.2, last sentence	Sentence removed.
NWS	11/25/05	<b>Page 3-2, Section 3.4 (Regulatory Process).</b> End of first bullet – Note: is unclear. Suggest changing wording to, Note: Applicants may initiate the sediment evaluation process prior to submittal of the JARPA and are strongly encouraged to do so.	Chapter 03, Page 3-2	Change made as suggested.
NMFS	12/5/05	The sediment evaluation process is carried out by the applicant with guidance from RSET and the regulatory branch. The adequacy of the resulting information is verified by RSET." If the information is determined to be adequate, the permit application is considered complete from the perspective of the sediment evaluation process." What assurance will there be that the information gleaned from the sediment evaluation process will be sufficient for an analysis on ESA-listed species and their habitat? When will NMFS be engaged and will they be able to approve a sampling and analysis plan (SAP)?	Chapter 03, Page 3-2, section 3.4	NMFS will be part of SAP review process.  Steph will add in the specific review agencies
ODEQ	11/30/05	Figure 3.1, first sentence: What does "... and project approval" mean? Please delete this phrase.	Chapter 03, Page 3-3	No change.
ODEQ	11/30/05	Section 3.5 The RSET Process: This section needs more information. The general overview of the process as described is important information, but the details of how RSET is going to work in each state are needed. A draft RSET Sampling and Analysis Plan review and implementation document should be developed and vetted by each state agency that will be involved in RSET. The final document should be a clear, concise guide that outlines how and when the SAPs and associated analytical results	Chapter 03, Page 3-4	No change.  Policy Committee question – Do we want to change the level of detail?  Is it clear to the public?  Add in an appendix

Commenter	Date	Comment	Section	Resolution
		<p>reports will be reviewed, and what the expectations are for the documents so that the format will become somewhat uniform. The document should include:</p> <ul style="list-style-type: none"> <li>• Who is the primary RSET representative from each agency? Is there a secondary reviewer in case of absence or workload? If so, how is that communicated? If a response is not received from that particular agency within the agreed upon timeframe it should be assumed that that agency waives their input on that particular project, unless an extension is requested;</li> <li>• Who will be responsible for submitting the SAPs for review to the RSET? The process for submissions should be clear. All should come from the USACE and not directly from the applicant or consultant. The submission from the USACE should include a cover letter that provides a summary of the proposed project and a timeframe for review;</li> <li>• Who will be the central coordinator of all SAP and analytical data comments? All comments should go to one person who will compile comments and submit to the USACE project manager to pass on to the applicants. Additionally, that person should be responsible for resolving any conflicting comments received by members of RSET and providing a final decision;</li> <li>• How are comments regarding proposed SAPs and associated analytical data submitted? Letter? Email? Phone? Approval of meeting notes?</li> <li>• Agreed upon timeframes for review of each step in the process are needed for the agency review and applicant submissions. Timeframes are needed for: <ul style="list-style-type: none"> <li>○ Initial SAP submittal. How much time is required to get through the process prior to the proposed dredging? Applicants should be aware of how far in advance they need to start the application and submission process so that they can plan accordingly;</li> <li>○ Length of time that the USACE will submit the SAPs or analytical information to the RSET. Since all of the information must go through the USACE, it should be clear as to how long the documents</li> </ul> </li> </ul>		<p>Need a name for the group looking at the SAPs</p>

Commenter	Date	Comment	Section	Resolution
		<p>can be held prior to submission; and</p> <ul style="list-style-type: none"> <li>○ Length of time that the RSET members have to provide comments regarding the SAP proposed. Again, if a member of RSET does not provide feedback within this timeframe, the process should continue without their input unless an extension was requested.</li> <li>• What is the process after the analytical results are available? If there are elevated levels of Chemicals of Concern (COCs) detected, what happens then? If a resampling plan is proposed, what is the timeframe for submission? What is required to be in the resampling plan? If resampling is conducted, how long does RSET need to review the data and provide feedback regarding the ultimate project proposal?</li> </ul> <p>If elevated levels of COCs are detected and the material is determined to be unsuitable for unconfined in-water disposal, what is the process for submitting an upland disposal site plan? Is all of RSET involved in the review of that plan? How long should the plan take? What has to be included in that plan?</p>		
ODEQ	11/30/05	Last bullet: This is a special note for the state of Washington. If important, shouldn't this also be included in the Washington information given earlier in the document? What does Washington do about upland and/or nearshore fill sites?	Chapter 03, Page 3-4	
NMFS	12/5/05	"The permit approval process includes consultation with other Federal actions." This should be rewritten as "The permit approval process includes consultation between Federal action agencies (Army Corps of Engineers [Corps] or EPA) to ensure that the actions do not pose jeopardy to ESA-listed species or their critical habitat and EFH."	Chapter 03, Page 3-4, 3 <sup>rd</sup> paragraph	Change made as suggested.
NMFS	12/5/05	This paragraph refers to the RSET State Team. Who is on this team and how does the state RSET teams relate to the larger RSET group which comprised of everyone who is involved with the subcommittees? When it states that RSET will consider some action, it is unclear whether this is the smaller State team, or the large group that meets periodically.	Chapter 03, Page 3-4, last paragraph	Change made as suggested.
NMFS	12/5/05	The RSET Process, the document states "At this time, use of the RSET by non-regulatory actions is discretionary for the agency or program." ESA consultation, formal or	Chapter 03, Page 3-4, Paragraph 7,	Need to add in a paragraph re. use of the document as guidance.

Commenter	Date	Comment	Section	Resolution
		informal, is required for all dredging and cleanup projects that may affect ESA-listed salmonids and essential fish habitat (EFH) and can require non-discretionary actions for the agency or program. NMFS will continue to use the best available science on dredging and sediment disposal effects on NMFS trust resources.	3.5	Consistency with other laws and regulations.  Add into 1.1 Work with Cathy
WDOE	11/30/05	Is this figure intended to depict the evaluation framework and decision making process used for a navigation dredging project located within a cleanup area or the same for a cleanup project (alone)?	Chapter 03, page 3-5, figure 3-2	
EPA	11/14/05	<b>Page 3-6, Section 3.6, Conflict Resolution process:</b> The sentence "At that time, the states will have representatives added to the group on an ad hoc basis." begs the question – what will the State's roles be and when would they be brought in? The intent of ad hoc basis" should be clarified and explained more fully. It is better to settle this now rather during a project-related conflict between agencies.	Chapter 03, Page 3-6	
NMFS	12/5/05	Who at the Corps will coordinate the RSET review of SAPs? In the Corps' Portland District, the Regulatory Branch conducts these reviews. Will that continue?	Chapter 03, Page 3-6, section 3.5,	Beta test underway.
WDOE	11/30/05	Conflict Resolution. The FINAL SEF must not conflict with Washington State regulations/rules. The State cannot be expected to relinquish existing regulatory authorities to other States or federal agencies.	Chapter 03, page 3-6, section 3.6	No state authorities will be relinquished.
USFWS	12/21/05	The 10-year permit cycle is too long, and could result in inadequate protection of listed species. This should be changed to a 5-year cycle, which would allow for adaptive management and incorporation of any monitoring data collected during the initial cycle.	Chapter 03, Page 3-6, section 3.7	Take out reference to ten year permit Steph will rewrite/delete?
EPA	11/14/05	<b>Page 3-7, Section 3.8, Item 1):</b> Data are collected and analyzed before issuance of a public notice, but consistent with the figure, this Section should clarify whether it is intended that RSET review and approval is required before the public notice.	Chapter 03, Page 3-7	Will add clarification
NMFS	12/5/05	The Process for Corps Civil Works Dredging, number 4. The statement in this item is premised on dredging actions being covered by the current Standard Local Operating Procedures for Endangered Species (SLOPES) programmatic biological opinion. In Oregon, dredging is no longer covered in SLOPES. However, in the Idaho SLOPES biological opinion, dredging is a covered activity. To add confusion, there is no programmatic consultation in	Chapter 03, page 3-7, section 3.8	No change.  BA will be prepared if action not covered.





Commenter	Date	Comment	Section	Resolution
		<p>indicates that the ACOE permit should be forwarded to the local RSET, it does not clearly identify who is responsible for this action, or who/where the local RSET contact will be. Section 3.4 states that RSET makes a determination on the adequacy of the information. No process is included describing responsibilities for communication if information is not adequate.</p> <p>The Port believes that it is essential that the process provides opportunity for direct contact on specific issues between technical specialists from regulatory agencies and the applicant at appropriate times. Such open and direct communication on a technical level is important for answering questions, avoiding misunderstandings, resolving issues and improving the actual permitted activities/projects in a timely and efficient manner. The Port recommends that the SEF specifically mention/encourage such direct communication as part of the process in cases where technical issues are being raised.</p> <p>The flow chart in Figure 3.1 indicates that the Sediment Evaluation process must be completed before consultation with NOAA. Without clear timelines and accountability for the RSET process, the Port is concerned that this step will result in lengthening the time it takes to successfully acquire permits.</p> <p>The flowchart misses several other components. For example, in the center of the chart there is a three-way arrow that only points towards certain boxes as output, but does not have a start or origination point, as is the case with the two-headed arrow in the bottom left of the chart. Similarly, the box "RSET review for information adequacy" has no out-arrow, indicating that the process would just dead-end there.</p> <p>The box "Obtain disposal site authorization/permission" seems to refer to another regulatory process by itself; given the purpose of this document, that would need to be spelled out further and provided information about.</p> <p>As multiple different parties and activities are involved within</p>		

Commenter	Date	Comment	Section	Resolution
		this chart, the chart should clearly identify who is responsible for specific decisions or actions. For example "Is ESA consultation required?" who determines this and at what timeline?; or "Complete Biological Opinion" all leave open the questions of responsibility, accountability, and timelines, which are frequently not answered in the text .		
NWP	12/16/05	In 3.5 it states that an information request can be submitted by the applicant or regulatory. What does this mean? Seems in conflict with Figure 3-2. It then moves to the RSET making a determination by evaluating existing information. Is the RSET going to compile the existing information or is the applicant. Does this information have to be presented in a defined format? Will there be timeframes for this decision? It is recommended that this timeframe be short, no longer than 15 days.	Chapter 03, Section 3.5	Change made as suggested. Some clarification provided.
Port of Portland	11/10/05	Section 3.5 describes the RSET process. However, many of the details on how RSET will work within this process are not included. For example no timelines or accountabilities are described; the process of how to contact RSET is not described, nor are any other communication procedures described. The Port believes that this lack of detail contributes to a lack of clarity within both the regulated and the regulatory communities.  Reference is also made to the RSET State Team. Composition, responsibilities, and accountabilities of this team are unclear. It is unclear whether this team is the same as the Local Dredge Team partially described in Section 1.6.1. It is unclear whether all members of the team have to sign the memo. The Port recommends that this section be critically examined and rewritten to clarify the process, especially with respect to setting out specific roles, responsibilities, accountabilities, and timelines for the RSET process	Chapter 03, Section 3.5	Being developed
NMFS	12/5/05	Sentence that says "At present, the RDT includes the four Federal agencies ..." In Oregon, it also includes ODEQ.	Chapter 03, section 3.6	Not at senior level
NWP	12/16/05	It seems like there should be a more appropriate name for the regional RSET. RSET itself means regional sediment... So regional sediment... is very redundant and confusing.	Chapter 03, Section 3.7	Open to suggestions
NWP	12/16/05	Section 3.7—"Holders of permits for maintenance dredging will have to continue to coordinate with RSET to determine if additional sampling and analysis is necessary before	Chapter 03, Section 3.7	Regulatory

Commenter	Date	Comment	Section	Resolution
		dredging beings in any given year.” Is RSET going to require a special condition on Corps permits to require contact with RSET. Who would be responsible for enforcing this requirement?		
Port of Portland	11/10/05	<p>Section 3.7 states that Corps permits for maintenance dredging may be issued for a period of up to 10 years. The basis for this limitation is unclear. It has been the understanding of the Port that permits might, in some circumstances, be issued for longer periods.</p> <p>Section 3.7 also states that holders of permits for maintenance dredging will have to continue to coordinate with RSET to determine if additional sampling and analysis is necessary before dredging begins in any given year. The Port believes that this part of the process is burdensome to both the regulated entities and the agencies. The Port recommends that the process include provisions for self-management of sediments in circumstances where a multi-year permit is in place and an initial sampling and analysis plan was approved, to decrease resource requirements for both agencies and regulated entities.</p>	Chapter 03, Section 3.7	<p>Regulatory policy</p> <p>No. Agencies need to review information</p>
ERDC	12/5/05	Address careful wording in section 4 to describe the use of MLE within a risk assessment framework. For example, much of the current discussion suggests that chemistry is not used with bioassay data, only as a screen to determine when bioassays will be conducted.	Chapter 04	Agree. Changes made as suggested.
ERDC	12/5/05	Section 4. Needs careful review and wording changes throughout. Some sentences need to be reviewed to be sure we say what we mean. For example, the first sentence says: “A risk based framework makes use of multiple lines of evidence...” Sometimes RA do not use multiple lines of evidence. What is being proposed is its use, because it may provide more accurate estimations of real risk...using all information available.	Chapter 04	Changes made in the first paragraph.
NMFS	12/5/05	<b>Conceptual Site Model (CSM).</b> NMFS strongly supports the use of conceptual site models in this SEF. However, the incorporation of CSM is incorrect throughout Chapter 4. According to the Federal Register providing guidelines for ecological risk assessment, the CSM is developed very early in the process of project identification and compilation of existing data (FRN 63. 1998. 26846-26924). The CSM will ensure identification of all appropriate and relevant	Chapter 04	Comment noted. Changes made as suggested.

Commenter	Date	Comment	Section	Resolution
		<p>exposure pathways, media, and potential receptors. All existing data can be weighed against the CSM to determine sufficiency and the need for additional analysis. Management decisions made without CSM run the risk of committing Type II errors (falsely concluding no risk when risk exists), leading to harm or jeopardy of ESA-listed species and/or adverse modification of their critical habitat. If all components of conceptual site modeling are applied at appropriate junctures of this sediment evaluation framework, then effects to ESA-listed salmonids and the habitat cannot be neglected.</p>		
NMFS	12/5/05	<p>This chapter is filled with jargon and multiple terms to make one point. It should be heavily edited and similar terms should be used. As written, this risk-based framework is not applicable to habitat degradation and to ESA-listed species. A separate CSM for dredging projects and contaminated site assessment should be constructed that include assessment endpoints that constitute the essential biological requirements of ESA-listed species. The CSM also needs to establish a connection between contaminated sediment exposure and fish health in ways that might translate to reduced distribution, survival, or reproductive success.</p>	Chapter 04	Chapter updated.
NMFS	12/5/05	<p>General. "Receptors of concern (ROC)" is a term used quite frequently in this chapter. However ROC is not well defined in the SEF. Somewhere, this document should state that ESA-listed species and the environment that supports these species will be thoroughly evaluated during the review process.</p>	Chapter 04	
Port of Seattle	11/30/05	<p><b>Application of the SEF to Cleanup:</b>  The SEF document attempts to provide a framework within which both navigation dredging and contaminated sediment projects may operate. However, the SEF only appears to be directly applicable to dredging and disposal activities conducted under USACE oversight. The vagueness present throughout the document on how contaminated sediment sites would fit within the SEF is clearly shown on the sediment evaluation process flowchart (Figure 3-2), which simply indicates a decision box for "Suitable for Evaluation Under SEF" with no explanatory text describing how such a suitability determination would be made.</p> <p>As described in Section 4.2.1, the primary role of evaluating</p>	Chapter 04	

Commenter	Date	Comment	Section	Resolution
		<p>contaminated sediment sites is not to determine if risks are present, as they presumably are or the site would not be under investigation, but whether the risks posed by sediment are unacceptable. There is no presumption of a remedial design at a contaminated sediment site, whereas a site being evaluated under a dredging program has the presumption that sediments will be removed. Since these are two fundamentally different decision processes, we recommend that RSET develop a process for providing consistent approaches for making dredging decisions only, and have contaminated sediment sites guided by EPA's national guidance for conducting risk assessments, and the states guidance for state only sites. Contaminated sediment site assessment approaches are highly site-specific and do not fit well into a proscribed process.</p> <p>Contrary to the suggestion made in Section 4.4.2, the initial data collection efforts should not be focused on whether there are local sources of contamination, other than in a very generic fashion. It is premature to gather empirical information on sources prior to determining if the contaminants present in the sediment represent an unacceptable risk. This type of information does not need to be collected unless unacceptable risks are present and a remedial action is contemplated.</p>		<p>This is up to the project proponent. Utilizing the CSM to identify potential sources could help the project proponent focus only on chemicals of potential concern or areas of potential concern; thus saving time and money.</p>
Port of Seattle	11/30/05	Tiered testing: The availability of tiered testing approach can in many cases proves to be a significant cost savings approach. We strongly urge you to retain the option to tier the bioassay testing until after the results of the chemistry are available, as this is a potentially large savings on some projects.	Chapter 04	This is maintained.
WDOE	11/30/05	General. Please cite the source of the framework diagrams (unless completely original). This chapter might also benefit from a brief discussion of how the generic framework described herein compares with the RI/FS process followed by sediment cleanup programs.	Chapter 04	
ODEQ	11/30/05	Fifth bullet: Change "Include active stakeholder involvement..." to "Promote active stakeholder involvement..."	Chapter 04, 4-1	Change made as suggested.
ODEQ	11/30/05	4.4.2: The first 5 lines of paragraph 1 are repeated word-for-word only a few lines later. I would suggest that you either remove those lines completely and just cover the	Chapter 04, 4-11	Removed second same paragraph.

Commenter	Date	Comment	Section	Resolution
		<p>concepts under the two following categories, or include all of the common information here and include only those things that are specific to contaminated site or dredging in the subsequent sections.</p> <p>Also, there's no need to capitalize "Primary Assessment."</p>		
ODEQ	11/30/05	Third line after second bullet: "RSET then determines..." may be better than "RSET determines..."	Chapter 04, 4-13	Change made as suggested.
ODEQ	11/30/05	First line in second full paragraph: "...tool for communicating ecological or human health (or other) issues..." would sound better as "...tool for communicating ecological, human health, or other issues..."	Chapter 04, 4-14	Change made as suggested.
ODEQ	11/30/05	<p>Second paragraph in 4.4.5: This entire paragraph is difficult to understand and needs to be rewritten.</p> <p>First bullet: "...to be a carrier of contaminants" should be "...to contain contaminants."</p> <p>Second bullet: "...to be a significant carrier of contaminants" should be "...to contain significant levels of contaminants."</p>	Chapter 04, 4-15	<p>Chapter updated.</p> <p>Changes made as suggested.</p>
ODEQ	11/30/05	<p>Second line: "...and a appropriate..." should be "...and an appropriate..."</p> <p>Third sentence under Identify ... Alternatives: "...the list should be inclusive of the range of possible options available..." should be "...the list should include the full range of possible options..."</p>	Chapter 04, 4-17	Changes made as suggested.
ODEQ	11/30/05	Figure 4.2: The higher of the two boxes on the right should be a diamond with Yes and No arrows leading to two possible outcomes.	Chapter 04, 4-5	Figures and Chapter updated.
ODEQ	11/30/05	Transition to Subsequent Level(s): There is only one more level so why not just say Transition to the Next Level" or "Transition to Level 2?"	Chapter 04, 4-6	Change made as suggested.

<b>Commenter</b>	<b>Date</b>	<b>Comment</b>	<b>Section</b>	<b>Resolution</b>
ERDC	12/5/05	Figure 4-1. Box 2, need to "identify contaminants of concern" Box 3, need point or arrow to allow decision to be made without having to do additional chemistry analysis. Box (Indirect Bioaccumulation Effects) needs to have Risk assessment removed and added to a new box right above the management decision box that draws on all lines of evidence.	Chapter 04, Figure 4-1	Figure updated.
ERDC	12/5/05	Fig 4-2: Box 2 needs the following bullets  Collect existing data Physical Chemical Biological Compare to screening guidelines	Chapter 04, Figure 4-2	Figure updated.
ERDC	12/5/05	Fig 4-2, Box 3 should read: Collect initial data Physical Chemical Biological Compare to screening guidelines	Chapter 04, Figure 4-2	Figure updated.
ERDC	12/5/05	Fig 4-2 needs an arrow from the "is the collected inform" box to the "conduct screening assessment" box.	Chapter 04, Figure 4-2	Figure updated.
ERDC	12/5/05	Fig 4-3: In some cases, you may collect sediment chemical data at the same time that bioassay data is collected	Chapter 04, Figure 4-3	Figure updated.
ERDC	12/5/05	Fig 4-4: Where does exposed surface fit in?	Chapter 04, Figure 4-4	This is discussed in Chapter 5.
ERDC	12/5/05	Fig 4-4, right lower branch box "Sediments exceed SL or biological criteria" suggests that a final management decision is that a SL is used to determine a "failure"	Chapter 04, Figure 4-4	Figure updated.
ERDC	12/5/05	Fig 4-6: This adds more weight to the top activities and less to the lower activities. Maybe needs more balance.	Chapter 04, Figure 4-6	Comment noted.
WDOE	11/30/05	Please replace "COI" with "COC" and add as a separate question: "What are the likely historic and ongoing sources of contaminants?"	Chapter 04, page	Changes made as suggested.
WDOE	11/30/05	RSET should consider all public comments carefully before the FINAL SEF "adopts" a proposed two "level" sediment evaluation approach that is the potentially confusing to the regulated community. If the FINAL SEF does recommend a two-level evaluation, it must be clarified this is not a regulatory requirement in the State of Washington.	Chapter 04, page 4-1 and 4-2	Public comments are being addressed and adoption of the 2006 version by WDOE and other agencies is pending. Stephanie Stirling to talk with DOE.

Commenter	Date	Comment	Section	Resolution
USFWS	12/21/05	Assessing resuspension of contaminants during the dredging activity should be incorporated into this paragraph	Chapter 04, Page 4-1, 2 <sup>nd</sup> bullet	Discussed in 4.2.3 and 4.2.4.
NMFS	12/5/05	Introduction, second bullet. This bullet should specifically state that risks to ESA listed species would be a major consideration. In addition, as mentioned above, the evaluation should also be conducted at dredging sites, not just at disposal or cleanup sites.	Chapter 04, page 4-1, section 4.1	Change made as suggested.
NMFS	12/5/05	The concept of settled or bedded sediment should be included in this figure. Settled sediment receives contributions from re-suspension, and contributes to bioaccumulation and direct contact.	Chapter 04, page 4-10, figure 4-5	Change made as suggested.
NWS	11/25/05	<b>Page 4-11, Section 4.4.2, line 6.</b> shouldn't "is" be "are"?	Chapter 04, Page 4-11	Change made as suggested.
ODEQ	11/30/05	Section 4.4.2: This section should include where the information that is requested is located. How long are data valid for use in decision-making?	Chapter 04, Page 4-11	TBD
USFWS	12/21/05	Insert "marinas and fueling areas" as other contamination sources.	Chapter 04, Page 4-11, last bullet on page	Change made as suggested.
NMFS	12/5/05	Primary Assessment - Contaminated Site Assessment. The name 'Primary Investigation' is confusing with the name 'Initial Assessment' on page 4-9. How do these compare to figures 4-3 and 4-4?	Chapter 04, page 4-11, section 4.4.2	Change made as suggested.
NMFS	12/5/05	One exposure pathway left out was 'remaining exposed sediments at the dredge site.' In addition, in the secondary media column, water column should be linked to bioaccumulation (found in the pathway column).	Chapter 04, page 4-12, figure 4-6	Termed Newly Exposed Surface
USFWS	12/21/05	Bioaccumulation needs to be added as a pathway in "dredging resuspension" row, and the birds/mammals column checked. Bioaccumulative contaminants can be resuspended by dredging, dissociate into the water column based on equilibrium partitioning theory, and also settle out in association with particles within and around the project site. Bioaccumulative contaminants in the water column are immediately available to fish and other aquatic organism. Contaminated suspended sediment and sediment resettling at the benthic surface are consumed by benthic/epibenthic organism and some contaminants will then disassociate from the sediment particles and be incorporated into tissues. The contaminants can then move up the food chain as organism are sequentially eaten by fish, birds, and	Chapter 04, Page 4-12, figure 4-6	Do not agree that there is significant exposure time from resuspension or that the residuals will pose bioaccumulative threat. These should be dealt with in remedial design.  RF to talk with Cathy Tortorici

Commenter	Date	Comment	Section	Resolution
		mammals. Therefore, bioaccumulation resulting from “dredging resuspension” is a complete exposure pathway that must be added to the figure. The question that must be addressed in the risk assessment is whether or not the uptake is significant to receptors, and this must be assessed considering baseline conditions (i.e., many organisms may already carry body burdens of bioaccumulative contaminants, so how will dredging process enhance uptake of the contaminants and result in effect levels given the existing body burdens of organism in the water body?) This is especially important when assessing risk to listed species, and must be accounted for in an Endangered Species Act (ESA) consultation.		
ERDC	12/5/05	Page 4-13: delete the “what are key receptors of concern” in both bulleted lists. Receptors are not defined or discussed until section 4.4.3. They need to be defined in section 4.4.3.	Chapter 04, Page 4-13	Changes made as suggested.
NMFS	12/5/05	As mentioned above, what is the difference between ‘existing’ and ‘preliminary’ data? A fifth bullet should be added to this list: [“How the ROC could be exposed/affected by the preferred dredging and disposal options?” When the CSM is sequenced corrected, this question would automatically be posed.] The paragraph at the end of this dredging section is identical to that at the end of the contaminated site assessment section. Should not this be specific to dredging?	Chapter 04, page 4-13	Chapter updated.
ODEQ	11/30/05	Instead of having the sections for Cleanup Assessment and Dredging Assessment repeat a lot of material, it would be better to have a single Assessment section that lists all of the tasks that are common to both and then points out the relatively few differences.	Chapter 04, Page 4-13	This was not done so that if someone picks up the manual they can go right to the appropriate sections
NMFS	12/5/05	As identified above, the CSM should be developed before or concurrent with the initial data collection. This will facilitate thorough identification of the ROC and answering data sufficiency questions regarding relevant endpoints. It will also ensure that exposure and effects associated with sediment that is in situ, or resuspended during remediation or dredging, or resuspended during disposal, and/or in situ during post-remediation action are accounted for. “A CSM identifies and describes contaminant sources, the processes linking those sources to the sediment in question, and the physical, chemical, and biological processes occurring	Chapter 04, page 4-13, section 4.4.3	Discussed in Section 4.4.3.

Commenter	Date	Comment	Section	Resolution
		within the sediment that affect exposure." The presence of a contaminant source in salmonid habitat does not necessarily equate to deleterious salmonid responses. Therefore the CSM needs to consider the physical, chemical, and biological processes occurring within the sediment in combination with salmonid life cycle and life history attributes.		
ERDC	12/5/05	Page 4-14: CSM also helps identify potential management options.	Chapter 04, Page 4-14	Added to section.
NMFS	12/5/05	"A CSM is invaluable in establishing the appropriate technical and managerial approach for addressing the specific issues associated with a project ..." When ESA-listed species are present, the CSM needs to include potential impacts on salmonid habitat as well as direct effects on salmonid health or performance in ways that reduce survival, reproduction, or distribution. Third paragraph. The CSM is also a powerful tool for determining whether enough information exists regarding the risks for receptors to allow for decision-making.	Chapter 04, page 4-14, section 4.4.3	Moved to 4.2.1. We do not call out ESA species but discuss the CSM in more detail.
USFWS	12/21/05	The service disagrees with current approach described here that allows exclusion based only on grain size and total organic carbon content. This exclusion will not adequately protect listed species, and this section needs to be revised to better protect resources in acres where coarser-grained materials occur along with a suspected contaminant source. Some contaminants are not exclusively associated with fine-grained materials. For example, polyaromatic hydrocarbons (PAHs) and polychlorinated biphenyl (PCB) oils can be associated with sandy materials and this has been documented in the lower Columbia River. The grain size exclusion statements in this document are too broad, and will not result in adequate protection of aquatic organisms in some areas. This exclusion could be revised to indicate that sediments associated with highly erosional areas are much less likely to be contaminated, and the sediment quality guidelines do not result in a reasonable prediction of toxicity for these areas. A framework could then be developed based on grain size and erosion or mobility of sediment at a site rather than the more arbitrary grain size percentage and total organic carbon values.	Chapter 04, Page 4-15, 2 <sup>nd</sup> bullet on grain size	Resolved? In Chapter 5?
NMFS	12/5/05	This section suffers from no reference to the CSM assisting in determination of additional data. The CSM is a primary	Chapter 04, page 4-15,	CSM added and section edited.

Commenter	Date	Comment	Section	Resolution
		<p>driver during this part of the assessment and cannot be underplayed. In addition, this section is full of repetitions (both sentences in the second paragraph), jargon ('other lines of evidence') and/or unsubstantiated phrases ('other sources of information'). All of this should be clarified or removed. Bullets – Are these examples of other lines of evidence/other sources of information? Bullet 1 – Proximity to contaminant sources – The sources that are considered should be those that are both permitted and unpermitted. Examples include: point sources, nonpoint sources (both urban and agricultural), and groundwater discharges. In addition, sediment transport mechanisms (boating, vessel traffic, flooding, etc.) and information about aggradations or erosion should be factored into this consideration.</p> <p>"Sediments are far-removed from ..." What does 'far-removed' mean? The arbitrary and potentially incorrect phrase should be removed from this bullet and the above list of sources should be included. Bullet 2 – Grain size distribution of the sediment. "If the sediment is largely composed of ..." What does 'largely' mean? Bullet 3 – Sediment chemistry. The use of currently available SQGs is not scientifically defensible for assessing the potential toxicity of a particular toxicant in sediment. The empirical SQGs (apparent effects thresholds, effects low range, etc.) are based on correlations between biological effects and a complex mixture. The use of SQGs in RSET needs to be defined. They can never be used to classify a sediment as 'not likely to be non-toxic' without conducting toxicity and bioaccumulation assays. In the future, tissue guidelines (and sediment guidelines derived from tissue toxicity information) for single toxicants may be robust enough to make decisions without additional testing. Bullet 4 – Sediment toxicity data. The following phrase should be added to this bullet: "Similarly, potential risks to ROCs, beyond the benthos, which had been identified in the CSM, may also trigger the need for further testing and analysis."</p>	section 4.4.5	
NMFS	12/5/05	This paragraph contains jargon and inconsistent terms.	Chapter 04, page 4-16, 1 <sup>st</sup> paragraph	Comment noted.
NMFS	12/5/05	The risks (exposure and effects) to all ROCs from all alternatives should be provided in the general information.	Chapter 04, page 4-17	
ODEQ	11/30/05	Under the risk-management alternatives, it would help the	Chapter 04,	Bullets with clarification added.

Commenter	Date	Comment	Section	Resolution
		<p>reader see and identify the options if they were listed as bullets. Also note that:</p> <ol style="list-style-type: none"> <li>1. Source control is critical for any on-going sources;</li> <li>2. Site-use constraints should be used in conjunction with other actions;</li> <li>3. Dredging with subsequent treatment and disposal in an approved facility is another option;</li> </ol> <p>Capping in place and natural attenuation would require institutional controls and monitoring to mitigate implementation risks and ensure that controls are properly maintained after implementation.</p>	Page 4-17	
NMFS	12/5/05	<p>There seems to be no evaluation on the long-term effects of the actual dredging action itself. Long-term effects can cause alterations in physical habitat features which can include modification of bathymetry with resultant changes in water circulation patterns, changes in habitat structure, and a shift to coarser substrate within the dredged area. Such conversions may affect plant and animal assemblages uniquely adapted to the particular site conditions these habitats offer with negative consequences on their productivity and thus, availability of prey resources for ESA-listed species. These factors need to be considered and lend weight to management alternatives such as bank stabilization through bioengineering.</p>	Chapter 04, page 4-18	Long-term effects will be dealt with as part of a monitoring program, as necessary based on RSET input.
ODEQ	11/30/05	<p>Why are there so many differences between a Level 2 cleanup site assessment and a Level 2 dredging assessment? Shouldn't sections 4.6.1 and 4.6.2 be essentially the same as what's needed for cleanup sites? About the only difference is to assess cleanup materials for potential disposal site requirements. We should try to emphasize the similarities but point out the differences.</p>	Chapter 04, Page 4-18	Addressed in first paragraph.
WDOE	11/30/05	<p>Porewater should be identified as a matrix/pathway of concern.</p>	Chapter 04, page 4-18, section 4.6.1	POREWATER is not addressed.
ODEQ	11/30/05	<p>Why aren't the special evaluations in 4.6.3 pertinent to cleanup sites?</p>	Chapter 04, Page 4-19	They are and Cs was added
NMFS	12/5/05	<p>Should the phrase before the four conditions (and on page 11-1) read "<b>One of these</b> four circumstances is expected to trigger special evaluations?"</p>	Chapter 04, page 4-19, section 4.6.3	Noted. Changed to read: One of the following four circumstances is expected to trigger special evaluations.
NMFS	12/5/05	<p>The preparation and review of the SAP needs to be incorporated into this figure. The figure is misleading in that it appears that the applicant and the action agency do not</p>	Chapter 04, page 4-2, figure 4-1	Added.

Commenter	Date	Comment	Section	Resolution
		need to consult until the end of Level I or Level II.		
ODEQ	11/30/05	In section 4.2.2, revise the first bullet: <ul style="list-style-type: none"> <li>Ensuring that the disposal of dredged material will not adversely affect or degrade the disposal site (in-water or in some cases on land),</li> </ul> Rewrite the second bullet: <ul style="list-style-type: none"> <li>Ensuring that sediment that will be exposed after dredging will not cause unacceptable impacts at the dredging site, and</li> </ul> Insert a third bullet: <ul style="list-style-type: none"> <li>Ensuring that the dredging process itself will not result in unacceptable impacts to the environment at the dredge site.</li> </ul>	Chapter 04, Page 4-3	Changes made as suggested.
WDOE	11/30/05	Please add a bullet citing evaluation for potential impacts to water quality.	Chapter 04, page 4-3, bottom of page	Change made as suggested.
USFWS	12/21/05	Add another bullet here that states “assess the degree that disturbance of contaminants in the sediments may impact species in and around the site.”	Chapter 04, Page 4-3, section 4.2.1	Change made as suggested.
NMFS	12/5/05	“The evaluation of dredged material is to determine whether there will be unacceptable impacts either during the dredging process or at the disposal site.” What are unacceptable impacts and what is the basis for this designation under the context of the ESA? Will it specifically equate to adverse modification of habitat harm or jeopardy? The above evaluation should also be extended to the newly exposed surface. To lend coherence between the three points in this section, a third bullet should be added: “What levels of exposure and effects (risks) will be posed by the dredging activity.”	Chapter 04, Page 4-3, section 4.2.2	Added to new Section 4.2.3.
USFWS	12/21/05	Add another bullet here that states “ensuring that the dredging activity will not expose organisms to contaminants at concentrations that will cause adverse effects.”	Chapter 04, Page 4-3, section 4.2.2.	Change made as suggested. Note: the third bullet added by ODEQ is a similar general comment.
ODEQ	11/30/05	Revise the first numbered point: Exit the assessment because sufficient information has been collected to answer questions about the need for and type of management that will be required,	Chapter 04, Page 4-4	Change made as suggested.
NMFS	12/5/05	The initial assessment box should include the identification of uncertainty. The preparation and review of the SAP needs to be incorporated into this figure. The figure is misleading in that it appears that the applicant and the action agency do not need to consult until the end of Level I or Level II.	Chapter 04, page 4-5, figure 4-2	Put reduced uncertainty in first bullet of introduction
NMFS	12/5/05	Transition to subsequent levels. The concept of uncertainty,	Chapter 04,	Change made as suggested.

Commenter	Date	Comment	Section	Resolution
		such as whether it exists or not, its type and magnitude, and/or the degree to which it has been managed, must be incorporated into this section. Otherwise, this section gives the false impression that either moving from one level to the next or arriving at a management decision was based on complete information.	page 4-6	
WDOE	11/30/05	Use of "tiered evaluation" here is potentially confusing. Suggest deleting use of the term "tier" or "tiered".	Chapter 04, page 4-6, 1 <sup>st</sup> full paragraph	Comment Noted.
NMFS	12/5/05	This figure mentions preparation of SAP in some detail, which leads one to believe that a SAP is not needed in Level I, which is not the case. Or if this figure includes both Level I and II, then the distinction should be made clear. The question about existing information does not make sense. How would you get out of Level I if there were no existing data? (same comment for Figure 4-4). This figure inappropriately characterizes the path/sequence for the development of the CSM. The CSM should be developed from the existing information and/or all that is unknown and known/presumed about the site. The CSM is developed before the development and implementation of the SAP, as the design of the SAP is premised upon the CSM which identifies the certainties, uncertainties, and appropriate and relevant endpoints. In addition, this figure should provide links with the assessment levels identified in figure 4-2. Otherwise, these two figures show no interconnection, and do not assist in understanding the process.	Chapter 04, page 4-7, figure 4-3	CSM has been added to this and all relevant figures.
ODEQ	11/30/05	<p>Figure 4-4 needs to be corrected.</p> <p>"Develop CSM" is not something that is done only if there is existing information. Both pathways need to go through that step.</p> <p>When evaluating the point-of-dredging impacts, what about the concentrations in the newly exposed sediment that was formerly at depth but will now remain at the surface?</p> <p>CSLs are listed in the figure but the text mentions SQGs (see page 4-13).</p> <p>Under confined disposal you should mention that site-specific evaluation will be required for the proposed disposal site.</p>	Chapter 04, Page 4-8	<p>Figure updated.</p> <p>Figure 4-4 will say SQGs.</p>

Commenter	Date	Comment	Section	Resolution
NMFS	12/5/05	The beginning path is this figure is ill-conceived. As commented about figure 4-3, the SAP development and implementation should be drawn from the CSM. This should be done whether or not there are existing data. Without a CSM, how will RSET be assured that the appropriate endpoints will be analyzed?	Chapter 04, page 4-8, figure 4-4	Change made as suggested.
NMFS	12/5/05	Initial Assessment. The above comments about how the CSM should be incorporated into the study and decision making processes in figures 4-2 and 4-3 should be incorporated into the narrative in this section. For example, the initial assessment is informed by the project intent and the CSM. Similarly, a main objective of the initial assessment is not only to clearly define goals of the project, but to also develop the CSM to address those goals, test assumptions and manage uncertainties.	Chapter 04, page 4-9, section 4.4.1	Change made as suggested.
NMFS	12/5/05	The generic models are a good start although they do not contain a great deal of detail. For example, the text mentions consideration of physical processes in sediment, chemical, and biological processes occurring in sediments but these are included only minimally, and there is not much about sources of exposure in the sense of nearby discharges/industry, <i>etc.</i> that may need to be considered in determining the suite of analytes to be included. This section seems to indicate that the agencies will have good information on contaminant sources and contaminants of interest and then will be able to identify the key receptors of concern. However, there is a general lack of information on contaminant sources, chemicals deposited in the sediments, and the ecological importance of various species. Rather than a 'best guess scenario,' scientists and managers should rely on data and probability. Therefore, the project information necessary for a management decision should begin with something similar to a Level 2 assessment stemming from a CSM. This section uses the terms 'existing,' 'preliminary,' and 'initial data.' These terms need definitions and if they overlap, some of the terms should be removed. In addition, the second paragraph describing a primary assessment is duplicative of the paragraph above it. This second paragraph should provide more detail about the process or be removed. Bottom paragraph. "Are there local sources of contamination either past or present ( <i>e.g.</i> industrial/municipal discharges, shipping, inputs from	Chapter 04, pages 4-11 to 4-12	

Commenter	Date	Comment	Section	Resolution
		industrial, municipal or agricultural sources, spill and urban surface runoff)?” ‘Residential surface runoff’ should be added to the list.		
ERDC	12/5/05	Bullet 3: need to consider temporal trends.  Need bullet where receptors are identified.	Chapter 04, Section 4.2.1	
ERDC	12/5/05	Section 4.2.2, Need another bullet with effects associated during dredging (i.e., suspended sediments). These are mentioned in figure 4-5 and 4-6, but not listed here. Likewise, Figure 4-6 does not include exposed surfaces.	Chapter 04, Section 4.2.2	
Port of Portland	11/10/05	Figure 4-3 is incorrectly described as a General Dredging Flow Chart. The General Dredging Flow Chart is Figure 4.4.	Chapter 04, Section 4.4.1	Figures updated.
NMFS	12/5/05	“The design and conduct of sediment assessments should be driven by these sediment/site-specific questions.” This sentence should be clarified. All levels of assessment (initial, primary, Level I and Level II) should be driven by questions derived during the problem formulation phase of during development of the CSM. Sentence 5. “The most common assessment questions: is there ‘reason to believe’ that bioaccumulative chemicals in the sediment pose an unacceptable risk to upper trophic levels?” Are there data that show this is the most common assessment question? Additionally, the idea that elevated risk at any trophic level could be acceptable is a problem. RSET should focus more on data and science and not on ‘reason to believe,’ which may not be based in science or sound data. Rather than having the onus placed on the regulatory agencies to prove a problem or go ahead with the project, the SEF should be focused on meeting regulatory requirements of the statutes identified in the document.	Chapter 04, section 4.4.4	Being addressed in Chapter 9.
NMFS	12/5/05	Level 2 draws from the original or revised CSM. Decision Point. In addition to the assessment being judged sufficient/insufficient for decision making, the identified uncertainty should either be “sufficiently” managed or clearly enumerated and associated with appropriate mitigation.	Chapter 04, section 4.5	Agreed.
ERDC	12/5/05	Section 4.4.2. Call this section Review of Existing Data. There are several words used here “primary assessment, data collection, initial data collection”...	Chapter 04, Section4 .2	Changes made as suggested.
NWS	11/25/05	<b>Chapter 5, General:</b> Yikes these SAPs sound like they need to be novels! SAPs in the DMMP have gotten relatively cookbook. The process outlined here is more thorough, thoughtful and project specific, but the overall	Chapter 05	Noted. Add SAP example to SEF Plan downloadable for a small page form.

Commenter	Date	Comment	Section	Resolution
		impression is that writing a SAP will be a huge undertaking. Maybe this just needs to be worked through, until there are some sample SAPs that can be used as demonstration. But I hate to think that users might look at this document as a huge increase in workload. Right now the SEF reads like it serves the environmental needs well. Some editing from the POV of the dredging community might be in order.		
ODEQ	11/30/05	Last par. of section 5.6: Move the last sentence up to make it the second sentence.	Chapter 05, 5-10	Change made as suggested.
ODEQ	11/30/05	Add disposal method to the list of things to include in the Project Description (Dredging Project).  In the 8 <sup>th</sup> line from the bottom of the page, change "physical nature of the sediment" to "physical nature of the sediment to be dredged."	Chapter 05, 5-2	"sediments" changed to "materials to be dredged"
ODEQ	11/30/05	Do you plan to include a total organic carbon content in the Exclusionary section of Table 5-1 or will you keep the current wording of "...less than (reserved)?"	Chapter 05, 5-5	Will propose a number yet to be determined.
ODEQ	11/30/05	Section 5.5, second line: change "...full characterization of a dredging project" to "...full characterization of the sediment."	Chapter 05, 5-8	Change made as suggested.
ERDC	12/5/05	Page 5-1, Para 3: It is unclear what the authors mean by "assessment questions" and "profiles". Please clarify.	Chapter 05, Page 5-1	
ERDC	12/5/05	Page 5-1: I am surprised there is no mention of data quality objectives anywhere in this chapter or in this document. It would be beneficial to add a section describing what DQOs are and why they are important in sediment evaluations.	Chapter 05, Page 5-1	
ODEQ	11/30/05	After the Overview Section, a section should be added that describes the required format for SAPs	Chapter 05, Page 5-1	Add examples in Appendix
NMFS	12/5/05	1. "An important component of any sampling and testing program is pre-project coordination with all concerned personnel." The SEF also need to identify that NMFS involvement in the Corps' permitting action is toward the end process so SEF readers understand that we participate at more than one point in the process. 2. Bullet 2. Instead of the SAP defining the CSM, the SAP is derived from the CSM. 3. Last paragraph. The following sentence should be added to this paragraph: "Results from the implementation of a complete SAP should address the risks posed to the majority of the identified ROCs, as well as assist in the management of uncertainty."	Chapter 05, page 5-1, section 5.1, 2 <sup>nd</sup> paragraph, bullet 2	1. NMFS – included at ALL stages per RSET. 2. Its SAP "coordination" includes. 3. Don't know what this means? ROCs are receptors of concern.
NMFS	12/5/05	"The draft SAP must be submitted to the appropriate subgroup of RSET for review." Add concerned regulatory	Chapter 05, page 5-10, 1 <sup>st</sup>	No change. RSET is agencies and services.

Commenter	Date	Comment	Section	Resolution
		agencies, the Services.	full paragraph	
WDOE	11/30/05	This paragraph reflects dredging program and not cleanup program guidance.	Chapter 05, page 5-10, 1 <sup>st</sup> full paragraph	No change made. WDOE suggest text??
NMFS	12/5/05	“As new guidelines are developed...existing data may need to be subjected to a one-time review to ensure sediments are still below the new guidelines.” Does this sentence mean existing data will be re-evaluated at the time that projects are proposed, or all on-going dredging and cleanup projects will be re-evaluated when new guidelines are developed? NMFS believes it is the latter, because as long as the Federal action agency retains authority over a project, they have an obligation to ensure that their actions are in compliance with all regulations (ESA included). At this same time, it would be prudent to include new contaminants not currently on the list.	Chapter 05, page 5-11, 2 <sup>nd</sup> paragraph	Changed “data” to “projects”
USFWS	12/21/05	See earlier comments on the grain size issue. Contaminants found in sandy sediments with low organic carbon are likely much more available than contaminants bound to organic matter typically found in finer-grained sediments, although actively moving sediments that are sandy (or gravel material) would not need to be sampled. Sandy materials that are stationary at marinas should be sampled. Some areas of the lower Columbia River that are sandy, but are not actively moving, should also be sampled. This section needs to be modified as described in earlier comments.	Chapter 05, Page 5-11, section 5.91., last sentence of 1 <sup>st</sup> paragraph	Note: Areas of marinas not actively moving are not included due to lack of “high current.” No change.
NMFS	12/5/05	This section is not clear. When and how is confirmation of ranking conducted? Much more information should be provided.	Chapter 05, page 5-12, section 5.9.2	Frequency follows frequency guidelines. Add example.
	11/30/05	Table 5.3: Point out that the need for testing will also depend upon the proposed disposal location.	Chapter 05, Page 5-13	No change. Should handle case by case.
	11/30/05	1. Section 5.95: This section needs a discussion of sample depth. In most cases 1-foot of depth will not account for over dredging (intentional or otherwise), advance management, or general errors. If the applicant proposes to dredge to a depth of 10 feet, then the NSM is likely to be anywhere between 9 and 11 feet in depth, so the archived sample should be taken at a depth of 12 feet. This sample must be taken a minimum of one foot below the design depth, which must include an allowance for over dredging or advanced maintenance.	Chapter 05, Page 5-14	<ol style="list-style-type: none"> <li>1. Needs to represent the exposed surface may be difference for each case. SAP should describe expected NSM.</li> <li>2. Agree</li> <li>3. No. Sediment could be contaminated and removed to a confined disposal, but area cannot be degraded. This doesn't perhaps apply to a cleanup project.</li> </ol>

Commenter	Date	Comment	Section	Resolution
		<p>2. Samples should be archived individually, not composited, especially where the applicant has proposed large DMMUs. This is not as important for small DMMUs or sub DMMUs.</p> <p>3. Second bulleted item: Make it clear that overlying sediments must have been determined by RSET to be suitable for unconfined in-water disposal. No screening levels should have been exceeded.</p>		
WDOE	11/30/05	This section should discuss and reference a) antidegradation policy in the SMS rule and b) the clarification paper on "QUALITY OF POST_DREDGE SURFACES" (SMARM 2001).	Chapter 05, page 5-14, section 5.9.5	Provide text
NMFS	12/5/05	"If dredging results in the exposure of NSM having higher chemical concentrations than the sediment that was dredged" How will the quality of the new sediment surface be determined? The comparison of the new surface to the quality of the overlying sediment is not acceptable. The overlying sediment quality will have been characterized by dredge cut composite. The decision to either conduct more analysis or require over-dredging or capping should not be based on a comparison to a composite. Since the sediment will remain in place, it should be more extensive than the sampling needed to characterize material that will be removed, since spatial distribution of contaminants will be a much more important consideration. The comparison to a composite could potentially yield increased exposure risk to contaminated surface sediments, in other words, a Type II error.	Chapter 05, page 5-14, section 5.9.5., bullet 1	Recommend "Z" analysis for high and moderate areas. No compositing of Z samples.
NWS	11/25/05	<b>Page 5-2, Section 5.2, Information Required in a SAP.</b> Sub-paragraph on "Computation of SAP Requirements (Dredging Project) contains confusion information. Suggest ending this paragraph after "...volume of sediment to be dredged." Delete next sentence, and move the rest of the paragraph to the "Project Description" paragraph.	Chapter 05, Page 5-2	Change made as suggested.
NMFS	12/5/05	This sentence refers to a sediment compositing plan. If this is the first time that this concept is introduced, then a definition should be provided. The computation of sampling and analysis requirements for both dredging and sediment cleanup projects is driven, in part, from the CSM. This should be incorporated to both of those paragraphs. Computation of sampling and analysis requirements (CS Project), last sentence. The basic requirements of sampling	Chapter 05, page 5-2, 1 <sup>st</sup> sentence, last sentence	Suggest discussion with CS folks on process of negotiations. No change.

Commenter	Date	Comment	Section	Resolution
		should be well defined and not subject to negotiations.		
		This chapter would benefit from any resolution to the apparent inconsistency between the sampling frequency for navigation dredging projects, e.g., composite samples per acre, and the same for cleanup site evaluations, e.g., number of grabs per acre. See also P5-8 (c).	Chapter 05, page 5-2, bottom of page	This is a fundamental difference between CS and a DP. A CS needs more info to determine course action.
ERDC	12/5/05	Page 5-3, Para on CSM: It makes much more sense to include the data gaps discussion under the Level 1 Information section rather than in the CSM section, as the Level 1 Information section discusses existing data quantity, quality, and appropriateness for use.	Chapter 05, Page 5-3	Change made as suggested.
ODEQ	11/30/05	<p>The following changes should be made to section 5.2:</p> <p><u>Level 1 Information:</u> Information on adjacent lands should be required if there were or are known COCs or cleanup sites on those lands.</p> <p><u>Project Description:</u> If the material is proposed to go nearshore or upland, a disposal plan must be submitted during the SEF process.</p> <p><u>Computation of Sampling and Analysis:</u> Change the second sentence to "The plan view drawing will include proposed core locations, a detailed view of the dredge prism with one or more cross sections, and the type and volume of sediment to be dredged."</p> <p>Change the fourth sentence to "The proposed dredging plan MUST contain..."</p> <p><u>Submittals:</u> This section is unclear. You should split out Draft SAP, Final SAP (if required), and Final Report. This is further elaborated in Section 5.6 but it should be made clear up front.</p>	Chapter 05, Page 5-3 and 5-4	<p>Change made as suggested.</p> <p>Change made as suggested.</p> <p>Change made as suggested.</p> <p>Change made as suggested.</p> <p>Referenced Section 5.6.</p>
	11/30/05	<p>1. Section 5.3.1 Initial Management Area Rankings: There should be a better explanation of how Tables 5-1 and 5-2 work together to determine Ranking. In other words, how does Table 5-1 drive Table 5-2?</p> <p>2. The volumes in Table 5-2 should be identified as maximum volumes</p>	Chapter 05, Page 5-4	<p>1. Table 5-2 does not determine rank. Only 5-1 and real data. No change.</p> <p>2. Ok</p>
USFWS	12/21/05	As mentioned in the proceeding comment, it in inappropriate	Chapter 05,	Exclusionary ranking is not solely based on grain

Commenter	Date	Comment	Section	Resolution
		to exclude material from testing based on grain size and total organic carbon alone. This grain size problem was described in an issue paper submitted to the Regional Sediment Evaluation Team and the issue has not yet been resolved. Therefore, the exclusion should be removed from the document until a better rule can be established. Also, there is no information about grain size in section 5.6, contrary to what is sated here.	Page 5-4, 1 <sup>st</sup> bullet	size and total organic carbon but location to potential sources and real data. Exclusion is a part of the CWA and MPRSA regulations.
NMFS	12/5/05	These rankings factors are only useful when good information is available. Most areas have little information or major data gaps. Although it is a place to begin identifying known contaminated areas, its usefulness to justify 'clean areas' worthy of exclusion is unfounded.	Chapter 05, page 5-4, section 5.3.1, bullets 1 & 2	Agree. Ranking require data two rounds.
NMFS	12/5/05	This table lacks the specificity necessary for meaningful evaluation. Where is the science behind these rankings? Exclusionary Rank - "Typical locations include the mouth and main stem channel of the Lower Columbia River..." although the paragraph before this table states "These initial rankings represent general guidance prior to evaluating existing information." Interpretation of this section would result in almost all dredged material falling under the exclusionary rank and would have only those few areas with known problems subject to chemical and/or biological analysis. NMFS strongly disagrees with this approach, calls for a discussion of this issue among the RDT, with the final outcome being a revision in the SEF. When will the currently reserved value for total organic carbon (TOC) content triggering exclusionary ranking be known? There should be sufficient time allowed for review of this missing value. If dredging sites or cleanup sites occur in ESA-listed critical habitat, exclusionary ranking should not apply. The rationale for this requirement is due in part to the potential for transport of contaminated sediments from locations beyond those 'sufficiently removed from potential sources of contamination'. Which of these rankings are considered suitable for unconfined aquatic disposal?	Chapter 05, page 5-5, table 5-1	Need discussion. No changes made at this time.
USFWS	12/21/05	This table should be revised to reflect the two previous comments above. The exclusion based on grain size and total carbon is not appropriate and should be removed from the table until the issue can be fully addressed. Coarse-grained materials can become contaminated. Sediment quality guidelines are not predictive of toxicity when applied	Chapter 05, Page 5-5, table 5-1	See above

Commenter	Date	Comment	Section	Resolution
		to coarser-grained sediments, but this is not a good justification for excluding coarser-grained sediment from testing in all situations.		
WDOE	11/30/05	Area ranking should not include an "exclusionary" category unless there are ample recent data to support such. Table 5-2. The table differs from current DMMP guidance on DMMU volumes, without sufficient explanation. Was there broad agreement on the volumes listed in this table?	Chapter 05, page 5-5, table 5-1	No change. Tables are from 1998 DMER--volumes were agreed to.
ERDC	12/5/05	Page 5-6, Para 3: It is good to stress the importance of historical data quality as stated in this section. However, just because the required information is available does not indicate that the historical data are useable. For example, what if the detection limits are reported (as required) but are above the SL1 values reported in Table 7-1? Would you then accept or reject these data? Please clarify what guidelines users should follow to accept or reject historical data.	Chapter 05, Page 5-6	Agree. See "Quality Assurance of Existing Data" page 5-6. No change.
WDOE	11/30/05	Probably should define chemical DLs here (or else add reporting limits/RLs).	Chapter 05, page 5-6	See Table 7-2 added.
NMFS	12/5/05	This sentence puts the burden on the government to show cause to test. This appears to rely on the 'reason to believe' philosophy rather than: (1) Analyzing the results of sufficient testing/sampling; and (2) making an informed decision based on science. "As new guidelines are developed...existing data may need to be subjected to a one-time review to ensure sediments are still below the new guidelines." Does this sentence mean existing data will be re-evaluated at the time that projects are proposed, or all ongoing dredging and cleanup projects will be re-evaluated when new guidelines are developed? NMFS believes it is the latter, because as long as the Federal action agency retains authority over a project, they have an obligation to ensure that their actions are in compliance with all regulations (ESA included).	Chapter 05, page 5-6, section 5.3.2, paragraph 1, sentence 1	As new guidelines are adopted, "ALL" projects will have to be assessed.
	11/30/05	The sampling requirements for a DMMU are inadequate. Delete the entire first sentence in section 5.4 a) and rewrite the rest of the first paragraph something like the following:  A DMMU represents a relatively homogenous unit of sediments that can be characterized by a single set of analyses. It could be the total volume of sediment from a small source or only part of the total volume of a large	Chapter 05, Page 5-7	Disagree. Need to discuss further purpose of a DMMU and what it represents.

Commenter	Date	Comment	Section	Resolution
		project. A separate decision is made on how to handle the sediment from each separate DMMU and is based on the analyses of a minimum of 3 to 5 samples from each unit.		
NMFS	12/5/05	<p>“To qualify for a separate characterization, however, the volume of the discrete lens must be amenable to being dredged separately from other sediment occurring in the dredging prism.” Is the requirement to characterize separate lens in heterogeneous sediments driven by mechanistic reasons? It appears that, regardless of the potential of a sediment lens to pose risks to ROC, if that lens cannot be separated during dredging, then characterization does not have to occur. This approach clearly does not appear protective and may pose significant exposure and effects concerns for ESA-listed species and EFH.</p> <p>Section b) Homogeneous Sediment. What is mean by “new projects involving native material?” How is “native material” defined?</p>	Chapter 05, page 5-9, 1 <sup>st</sup> paragraph; section B	<p>D.M. testing is designed to assess material at the disposal site. Therefore, if a lens cannot be discretely dredged but is mixed with the D.M., there is no rationale for testing.</p> <p>Native material is material never exposed</p>
WDOE	11/30/05	“The practical depth of a cut based on proposed dredge technology ...” should not always be based on capabilities of a conventional clamshell bucket. Other available dredge technology has capabilities that differ from the typical clam shell dredge.	Chapter 05, page 5-9, 2 <sup>nd</sup> paragraph	Change made as suggested. Gives an example.
NMFS	12/5/05	Determination of sampling and analysis requirements. It appears that the basic concepts applied to the ranking of sites identified for dredged material management unit (DMMU) volumes have no basis in science. The only substantive guidance provided in this section for sampling and analysis were “will be determined on a case-by-case basis using best professional judgment” and “usually is determined during negotiations between the project proponent and regulators.” This of course is not guidance, but merely states the uncoordinated way that dredged material sampling is presently being performed. This section needs to be revised to include efforts to keep contaminated dredged material from being redistributed by dredging and disposal using a scientific and systematic approach.	Chapter 05, pages 5-7 and 5-8, section 5.4	No change. Need to discuss and/or provide text.
Port of Portland	11/10/05	Chapter 5 is a thorough and useful description of the SAP process and requirements. It would be helpful for SEF users to also have a sample SAP included as an appendix to this document.	Chapter 05, Section 5	Sample SAPs will be included.
NMFS	12/5/05	“Information required in a sampling and analysis plan	Chapter 05,	CWA and MPRSA.

Commenter	Date	Comment	Section	Resolution
		(Based on regulatory program)." To which 'regulatory program' is this sentence referring?	section 5.2	
Port of Portland	11/10/05	The description of how to deal with heterogeneous sediments and discrete lenses assumes that the sampling approach is based on knowledge about the extent of the lenses and layers. In most cases this information cannot be accurately known until sediment sampling (and analysis) has been performed. This "chicken and egg" conflict should be considered in further work on this section.	Chapter 05, Section 5.5	Agree. Some adjustments based upon field observation may be necessary.
NMFS	12/5/05	As identified numerous times above, the SAP tiers from or is informed by the CSM, it does not "identify the CSM. "Last paragraph. What does "uniformity of acceptability" mean?	Chapter 05, section 5.6	Changes made as suggested. "Identify" changed to "Describes"  Deleted "of acceptability"
NMFS	12/5/05	Citations from historical projects or scientific studies should be provided to substantiate the assertion that "The quality of the sediment at the dredging site tends to stay the same for successive years ..."  "Provided the sediments are found suitable for unconfined aquatic disposal for each dredging event, the 'frequency' of additional characterization after that will depend upon the rank of the project site determined by the results of the first two rounds of testing." This statement appears to say that testing will never occur if the sediments receive two "passes." As often mentioned above, this approach has the potential to miss newer contamination and pose significant risks to ESA species, their habitat, and EFH.	Chapter 05, section 5.7	Not added to text. Comment noted. Many examples in COE sediment assessment reports.  Frequency is based on "rank" 2, 5, 6, and 7.
NMFS	12/5/05	NMFS' experience with dredging projects shows that testing on an annual basis is necessary and appropriate due to the dynamic nature of sediment into and out of a dredging prism. The guidelines regarding frequency of testing need to be modified to be more inclusive by taking samples on an annual basis.	Chapter 05, section 5.7	Samples will not be taken on an annual basis. It is cost prohibition and unnecessary. No change.
Port of Portland	11/10/05	It appears that dredging classified to occur on a frequent basis, as described in this section, means sampling only every 5 years, assuming moderate risk, as described in Section 5.3.1. However, this section also seems to indicate that the ability to be excluded from further testing under this frequency guideline, applies only if sediments are found suitable for unconfined aquatic disposal. Clarification is needed	Chapter 05, Section 5.7	Need to discuss.
Port of Portland	11/10/05	The last paragraph in this section refers to Section 5.6.2,	Chapter 05,	Changed to 5.9.2.

Commenter	Date	Comment	Section	Resolution
		which does not exist within this document.	Section 5.9.1	
NMFS	12/5/05	<p>1. What is the history of implementing exclusionary status? Has information about those excluded projects been documented and tracked? A summary of the percentage of exclusionary projects by year for the past 10 years should be provided. At this point, the protectiveness/acceptability of exclusionary status is solely based on trust. There should be much more substantiation of how, where, when and how well this status protects ROCs.</p> <p>2. Paragraph 4. Does TBC stand for 'to be considered?'</p>	Chapter 05, section 5.9.1 and paragraph 4	<p>1. No change.</p> <p>2. Yes, change made.</p>
Port of Portland	11/10/05	This section indicates that in areas with rapid shoaling, at least one grab sample would have to be collected and analyzed. The process indicates that a SAP would be required for this activity, increasing time to removal of the shoal. The Port believes that development, submittal, and approval of a SAP for a rapidly shoaling area, given limited in-water work windows. Additionally, it is unclear in the document how a sample would facilitate the process or contribute to any other management decision with respect to the shoal.	Chapter 05, Section 5.9.3	No change. SAP for (c) not required, but some coordination with RSET recommended. This will be a rare case of where all sediment quality work has been completed, but dredging has not.
USFWS	12/21/05	The service disagrees that small volumes can be excluded from testing. All small volumes projects should be reviewed on a case-by-case basis. There can be situation where small volumes need testing and can pose a threat to listed species, especially if high concentrations are found in the material and disturbing the material could pose acute toxicity to salmonids or other species (and the low ranking estimate was based on incorrect best professional judgment). This section needs to be revised, or additional data added to support the position that small volumes would not pose a threat of toxicity to listed species.	Chapter 05, Section 5-13, table 5-3	Low rank has to be based on data not BPJ. No change. Need further discussion.
NMFS	12/5/05	Where are data that could support the rationale for such a table? What does heterogeneous mean in this instance? What does homogeneous mean? How are the volumes justified within each ranking? NMFS does not have enough information to determine whether the high ranking, with volumes from heterogeneous sediments up to 5,000 cubic yards, is protective of ESA and/or EFH. This should be rectified before finalization of the SEF.	Chapter 05, table 5-2	No change. NMFS needs more data.
ERDC	12/5/05	Chapter 6: A glaring omission is the lack of field QA/QC procedures anywhere in the document, except for a brief	Chapter 06	1. Added Section 6.6 "Quality Assurance/ Quality Control Considerations" with preliminary language

Commenter	Date	Comment	Section	Resolution
		<p>mention of field duplicate samples buried in Figure 12-4. A section should be added to the document that describes how field QA/QC shall be addressed in sediment evaluations. Example descriptions follow.</p> <p>Accuracy in the field should be assessed through the use of appropriate field equipment and trip blanks, and achieved through adherence to all sample handling, preservation, and holding time requirements. Field blank samples should be analyzed to check for procedural contamination that may cause sample contamination. Equipment rinsate blanks should be used to assess the adequacy of decontamination of sampling equipment between individual sample collections. Trip blanks should be used to assess the potential for contamination of samples due to contaminant (i.e., volatile organic compounds) migration during sample shipment, handling and storage. Procedures for preparation of field blanks, equipment rinsate blanks, and trip blanks should also be described. Accuracy of the field instruments should be assessed by using daily instrument calibration and calibration checks. Field blank, equipment rinsate blank, and trip blank analysis frequencies should also be specified.</p> <p><b>TRIP BLANKS</b>  Trip blanks are used to detect volatile organic compound (VOC) contamination of samples during sample shipping and handling. Trip blanks are 40-milliliter (mL) volatile organic analysis (VOA) vials of American Society for Testing and Materials (ASTM) Type II water that are filled in the laboratory, transported to the sampling site, and returned to the laboratory with VOC and VPH samples. Trip blanks are not opened in the field. The planned frequency for trip blanks is one trip blank per cooler containing samples for VOC analysis.</p> <p><b>EQUIPMENT RINSATE BLANK SAMPLES</b>  Equipment rinsate blanks (ERB) are samples of ASTM Type II water passed through and over the surface of decontaminated sampling equipment. The rinse water is collected in sample bottles, preserved, and handled in the same manner as the samples. ERBs are used to monitor effectiveness of the decontamination process. The</p>		suggested here.

Commenter	Date	Comment	Section	Resolution
		<p>planned frequency for ERBs is one per day per equipment type. If more than one type of equipment is used to collect samples for a particular matrix, then an ERB is collected and submitted for each representative group of equipment. Typically, ERBs are analyzed for the same analytes as the corresponding samples collected that day.</p> <p><b>FIELD OR DECONTAMINATION WATER BLANKS</b> Field blanks are samples of the source water used for decontamination. This blank is used to monitor for potential contaminants introduced from the water source during field decontamination procedures. Typically, at least one sample for each source of water or one field blank per lot number of analyte-free water for a specified event will be collected and analyzed for the same parameters as the corresponding field environmental samples. If more than one lot number of ASTM Type II water is used, or if potable water from more than one location is used, additional field blanks are collected because these constitute different sources.</p> <p><b>DUPLICATE (BLIND) FIELD SAMPLES</b> “Blind” duplicate field samples are collected to monitor the precision of the field sampling process. Duplicates will be collected for surface water samples only, because the inherent variability of sediment and tissue samples precludes obtaining a true duplicate. The identity of the duplicate sample is not noted on the laboratory COC form. The field team leader will choose at least 5 percent (1 in 20) of the total number of sample locations known or suspected to contain moderate contamination, and duplicate field samples will be collected at these locations. The identity of the duplicate samples is recorded in the field sampling logbook, and this information is forwarded to the data quality evaluation team to aid in reviewing and evaluating the data. The source of the blind field duplicate for the QA samples will not be revealed to the laboratory. The blind field duplicate sample will have a unique sample identification number on the COC form sent to the laboratory such that the laboratory cannot determine its source.</p>		
ODEQ	11/30/05	Second paragraph: Change the first sentence to read “...current shoaling patterns, the character of the dredge prism, and volumes...”	Chapter 06, 6-1	Change made as suggested.

Commenter	Date	Comment	Section	Resolution
ODEQ	11/30/05	Table 6.1 is a large table and should have its own page. The text runs into the table.	Chapter 06, 6-2	Change made as suggested.
ODEQ	11/30/05	First full paragraph: We suggest that you rewrite the second and third sentences something like the following: "Dredging projects are concerned with the contaminant concentrations found throughout and beneath the dredge prism. Sediment characterization projects are generally interested in determining the vertical and horizontal magnitude and extent of the contaminants."	Chapter 06, 6-4	Change made as suggested.
ODEQ	11/30/05	Section 6.5.5: Move the third paragraph to the beginning of this section.	Chapter 06, 6-7	Change made as suggested.
ODEQ	11/30/05	Last paragraph in section 6.5.5: Put the second sentence after the sentence that ends with "...using a cutting device."	Chapter 06, 6-8	Change made as suggested.
NWS	11/16/05	<b>Page 6-2, Table 6-1.</b> All containers should have Teflon lined lids. Containers should be laboratory provided pre-cleaned certified containers for the specified analyses. These are usually included in the cost of the analyses. The laboratory may request a different sample size than specified in this table. Superscript 5 has been left off of the table. The volatiles jars should be filled with zero head-space.	Chapter 06, Page 6-2	Change made as suggested.
WDOE	11/30/05	What is the level of agreement among regulatory agencies on the statement "For alternative 2, ..."?	Chapter 06, page 6-3, top of page	Discussion item for policy committee.
WDOE	11/30/05	Please describe the acceptance criteria for both core and grab samples, e.g., when is a sample OK and when does it need to be rejected?	Chapter 06, page 6-4 and 6-5, sections 6.4.1. and 6.4.2.	Language added for acceptability criteria.
NWS	11/16/05	<b>Page 6-5, Section 6.5.1.</b> All decontamination rinsate water shall be collected and properly disposed. The use of dedicated sampling equipment such as bowls and spoons can reduce the amount of decontamination required in the field.	Chapter 06, Page 6-5	Change made as suggested.
WDOE	11/30/05	The homogenization process described may lead to loss of volatile organic compounds (VOCs) and perhaps semivolatiles. Subsampling protocols must address this issue, either here or elsewhere.	Chapter 06, page 6-8, 1 <sup>st</sup> full paragraph	Change made as suggested.
ODEQ	11/30/05	The comments written above about archiving (see 5-14) should also be carried over into section 6.6	Chapter 06, Page 6-9	Change made as suggested.
NMFS	12/5/05	It says here that, for sediment characterization projects, compositing of sediment samples is not recommended. It	Chapter 06, paragraph 1	Discussion item for policy committee

Commenter	Date	Comment	Section	Resolution
		seems that the same would be true of exposed surfaces exposed during dredging projects, even if samples from the DMMUs to be removed were composited.		
Floyd Snider	11/30/05	<p>The SEF proposes uses screening level marine criteria based on Washington State's Sediment Management Standards (SMS), similar to what has been used historically in the Dredge Material Evaluation Framework (i.e., Dredge Material Management Program/Puget Sound Dredge Disposal Analysis criteria). Additionally, the SEF proposes using the Washington State Department of Ecology's (Ecology's) draft freshwater sediment values first published in 2003. Importantly, this would constitute the first use of the freshwater criteria in a guidance or regulatory setting. These freshwater numbers were drafted for eventual promulgation (after additional validation) by Ecology. As of the date of this letter, Washington State has not yet promulgated these draft numbers. In fact, draft RSET Issue Paper #11 recommends that Oregon and Idaho freshwater reliability analyses be performed with these freshwater values, presumably prior to inclusion in the SEF. However, the freshwater sediment criteria in the SEF apparently force that additional validation/reliability analyses onto the regulated community. Including these criteria seems particularly troubling given that new freshwater data sets (such as the Lower Willamette Group's Portland Harbor dataset) are available for RSET to use for validation <i>prior</i> to inclusion in the SEF. Basically, these new freshwater sediment values treat the disposal of material resulting from maintenance dredging as a question of contaminated versus clean, instead of asking whether or not the material is suitable for open-water disposal at a defined and monitored disposal facility. We would also suggest clearer language concerning when it is appropriate to use marine criteria versus freshwater criteria. For instance, if the site is freshwater, but the available openwater disposal sites are marine, are marine criteria applicable? The current "and/or" wording is not entirely clear.</p>	Chapter 07	<p>The freshwater SQGs provided in the draft SEF represent the best available science regarding freshwater effects levels in the Pacific Northwest region. These SQGs represent a significant improvement over the existing dredged material guidance manuals which are currently relying on marine values to regulate freshwater sediments. RSET will continue its discussions with member regulatory agencies as to what level of reliability/sensitivity would be acceptable to the various agencies and programs.</p> <p>RSET plans to incorporate additional data sets in the development of freshwater SQGs as data become available (including the Portland Harbor dataset); however, these data will not be available for inclusion in the first issuance of the guidance in Fall 2006. It is not the intention of the SEF to force the validation/reliability analyses onto the regulated community.</p> <p>Additional clarifying text will be provided regarding when it is appropriate to use freshwater versus marine SQGs.</p>
Floyd Snider	11/30/05	Section 7.6 of the SEF says that elutriate testing "may" be required for those chemicals that exceed Screening Level 2 (SL2) guidelines. Furthermore, in addition to elutriate testing, hydraulic modeling may also be required to characterize mixing and dispersion processes in the	Chapter 07	The discussion of elutriate testing has been moved from Chapter 7 to Chapter 11 – Special Evaluations. Additional clarification on elutriate testing has been added, including references to the 401 Water Quality Certification process, and

Commenter	Date	Comment	Section	Resolution
		<p>receiving waters. This testing presumably is aimed at assessing water column concentrations in the receiving water at appropriate points of compliance. Of the suggested testing, for most dredge proponents, only the Dredge Elutriate Test (DRET) and Standard Elutriate Test (SET) are relevant. While acknowledging the utility of these tests, there is a concern about the phasing of this testing in practice. For instance, if a round of sediment assessment is performed, and based on those results the RSET then requires DRET to be performed, the permittee would then need to perform an unanticipated additional round of sediment sampling and testing. For the interpretation of test results, the "appropriate point of compliance" may not yet be known due to parallel negotiations concerning water quality certification. Finally, would RSET require testing for a full suite of COCs (which may be impossible, given the limited water volumes of the DRET/SET tests), or would RSET require testing only for COCs exceeding the SL2? The SEF should more clearly specify the process and expectations in regard to this testing. The greatest concern lies in water quality criteria comparisons discussed in Section 7.6 of the SEF. The SEF states that elutriate testing results may be compared to acute water quality criteria if the project involves "intermittent construction" (defined as 8 hours on and 16 hours off). If the project is a more "continuous project" (which is not defined, but is assumed to be longer than 8-hour shifts and less than 16 hours off), the results may be compared to chronic water quality criteria. In reality, most dredge projects work longer than 8-hour shifts due to contractor availability and narrow in-water work windows. Therefore, almost all maintenance dredge projects would be classified as a "continuous project," requiring a comparison of the elutriate testing results to chronic water quality criteria, which is entirely inappropriate. Comparison to acute water quality criteria is much realistic, given transitory fish exposures in and out of the construction area. The only biota that would be exposed continually are benthic biota within the work area, which would be subject to eventual removal via dredging! For this reason, environmental dredging projects in Washington State typically compare DRET results to acute, not chronic, water quality criteria. Finally, chronic water quality criteria are also extremely low for some COCs, and standard have</p>		<p>specification that only testing of those COCs exceeding the SL2 levels will be required. The elutriate testing procedures presented in the SEF are consistent with both existing federal guidance manuals (i.e. "Green" Book and Inland Testing Manual) and the regulatory procedures that are currently being implemented in the Pacific Northwest.</p> <p>If the dredging proponent anticipates elutriate testing may be required, based on existing sediment quality data, it is strongly encouraged that additional sample volume be collected during the initial mobilization to prepare for this contingency.</p> <p>As noted, acute water quality criteria are often the appropriate criteria to use for evaluating intermittent in-water construction projects. However, the selection of appropriate water quality criteria will be determined by the agency responsible for 401 Water Quality Certification. Specifics as to what constitutes an "intermittent" versus "continuous" project will be removed from the text as this is a Section 401 determination.</p> <p>We agree that elutriate tests do not provide information on potential for dredging residuals. Recommended approaches for evaluating dredging residuals are presented in Section 11.5.</p>

Commenter	Date	Comment	Section	Resolution
		<p>volume limitations, given that larger water volumes are typically required for lowered reporting limits. Of note, on Page 7-10, the statement that "dredging residuals that may be left behind in the surface....must be appropriately managed to avoid ongoing, long-term risks...including bioaccumulation..." is vaguely written and inappropriately located in this section on elutriate testing. DRET and SET testing are about water quality effects, and are not designed to be predictive of dredge residual quality. Dredge residuals are not a water quality issue per se, and not easily assessed via standard water quality testing.</p>		
IDEQ	12/1/05	<p>The DSEF under heading 3.9 states that, "...Idaho cleanup and EPA Superfund may find this document a useful resource. Consistency across the board with Superfund projects is a reasonable goal, but may not always be desirable or possible." We support this consistency. We have compared screening criteria between the Bunker Hill ROD and the DSEF and have questions regarding why the criteria values are so different. Our concerns arise from the fact that almost the entire Coeur d'Alene basin is included in the Bunker Hill Superfund site. The Corps and DEQ deal with permit decisions regularly within this Superfund area, many of which include minor amounts of dredging. Since the Idaho Water Quality Standards only address water column pollutants we have looked to the ROD for guidance on how to handle metals contaminated sediment. For example, the Bunker Hill Record of Decision (Operational Unit 3) Table 7.2-9 on page 7-103 lists chemicals of environmental concern (CEOC) and their concentrations for protection of aquatic organisms. These values, in some instances, are much lower than those in Table 7-1 of the DSEF. Since the values in the ROD are site specific and based on large amounts of data collection we feel that this information should be utilized and be consistent with decisions made by the RSET. Further, the DSEF should be clearer as to what regulatory levels the RSET will use to evaluate a project.</p>	Chapter 07	<p>Enhanced representation from the Idaho DEQ is being requested for both the Policy and SQG Subcommittees of RSET to ensure issues specific to this region are being adequately addressed. It is anticipated that upcoming meetings of the SQG Subcommittee will be discussing if and how Bunker Hill data should be incorporated into future updates of freshwater screening criteria.</p>
NMFS	12/5/05	<p><b>New potential contaminants of concern.</b> NMFS identified at least two classes of compounds that should be considered as potential new contaminants of concern: Polybrominated Diphenyl Ethers (PBDE) and pyrethroids. It would be good to include a paragraph about procedures for</p>	Chapter 07	<p>In response to these concerns, Issue Papers on PBDE's and pyrethroids are being prepared in the Chemical Analyte Subcommittee to assess whether these chemicals warrant additional consideration in the SEF. Nominating new</p>

Commenter	Date	Comment	Section	Resolution
		nominating new chemicals, about encouraging measurement of the contaminant to collect data on its distribution, and about generating guidelines for the contaminants of special concern or new contaminants. NMFS assumes the first step would be to prepare a RSET issue paper. If there is consensus that the compound is a problem, what are the next steps? Also what are procedures for changing guidelines as new data are generated? In the current version of the SEF, these procedures are not clearly defined. The process for changes should be clarified		chemicals to the SEF analyte list and developing/updating SQGs as new data become available will be conducted during periodic SEF reviews. The Policy Committee is evaluating procedural mechanisms, such as period review meetings, to ensure that a regular forum is provided to maintain and update the SEF. If appropriate, RSET will encourage regional regulatory programs to collect additional information on candidate chemicals as part of their ongoing monitoring activities, but it is RSET policy to not impose sediment quality research activities on the regulated community.
NMFS	12/5/05	<b>Chemical mixtures.</b> The SEF does not contain any discussion on how mixtures of compounds will be addressed. The 'one chemical at a time' approach is not reflective of exposure conditions in the field. A process for incorporating mixtures analysis, and development and implementation of SQGs should be included in the final version of this SEF.	Chapter 07	Both the AET and the Floating Percentile methods used in the SEF are empirical methods that implicitly take into account the chemical mixtures found at dredging and sediment cleanup sites. Similarly, bioassay testing, another key component of SEF sediment quality assessment, accounts for exposures to chemical mixtures. A possible alternative to these approaches is the use of SQG quotients; however, researchers in this area have indicated threshold SQG quotients are a site specific determination and are not universally applicable to all sites.
NMFS	12/5/05	<b>Marine Criteria.</b> Marine criteria promulgated under the sediment management standards (SMS) refer to adverse <i>benthic</i> biological effects. This clarification should be made throughout the document to describe the applicability/limitations of both the RSET guidelines and the SMS criteria. Until salmonid-relevant analytic approaches and guidelines are developed and implemented, these sediment chemical values are lacking in their ability to predict the potential for affects to ESA-listed salmonids.	Chapter 07	Comment noted. Clarifying text regarding the limitations of existing SQGs will be added to the SEF. It should be noted, however, that benthic biological tests may be useful for characterizing the viability of representative salmonid prey species, such as Chironomus and Hyalella.
ODEQ	11/30/05	We have not yet reached an agreement on the use of the Floating Percentile Method (FPM) for the derivation of sediment quality values (SQVs). Furthermore, even if it is employed, we have not yet reached an agreement on what reliability indicators to use in the FPM for the development of the SQVs. Please see Attachment A for a discussion of DEQ's proposed reliability indicators	Chapter 07	Comment noted. The SQG Subcommittee is continuing to build consensus between the various state regulatory programs to establish a consistent and appropriate set of freshwater SQGs.
ODEQ	11/30/05	DEQ ATTACHMENT – ODEQ APPENDIX A	Chapter 07	See response to previous comment.

Commenter	Date	Comment	Section	Resolution
		Comments on Floating percentile method		
WDOE	11/30/05	<p>General.</p> <p>Ecology plans to validate the freshwater sediment guidelines values proposed in Table 7-1.</p> <p>Until such time as the freshwater guideline values have been validated, the freshwater sediment quality values proposed as SL1 are not known to be protective of chronic/sublethal effects or benthic community health. They should only be used on an interim basis and with appropriate knowledge of their potential limitations.</p> <p>The RSET should hasten development of defensible target tissue levels for organisms and sediment bioaccumulation interpretive guidance.</p>	Chapter 07	<p>Comment noted. RSET will incorporate the results of Ecology's validation study when they are available, and will rely on best available science in the interim.</p> <p>RSET is moving ahead with the tasks required to calculate target tissue levels (TTLs) for human health and wildlife, and will begin working on TTLs for fish as resource allow. We are aware of the urgency of this issue and are moving as quickly as possible with available funding.</p>
WDOE	11/30/05	Table 7-2. Please define Method Reporting Limit here	Chapter 07	Clarification made as suggested. In addition, MRL has been changed to Sample Quantitation Limit (SQL) to be more consistent with EPA risk assessment guidance.
ODEQ	11/30/05	Section 7.2: Use proper formatting for titles of publications here and in the rest of the document.	Chapter 07, 7-1	Comment noted.
ODEQ	11/30/05	<p>Section 7.9 Interpretive Guidelines; 2nd paragraph:</p> <p>Change 1st sentence to: "...to predict potential adverse aquatic biological effects..."</p> <p>Add a reference for this assertion made in the last sentence.</p>	Chapter 07, 7-13	Change made as suggested.
NWS	11/16/05	<b>Page 7-1, Section 7-2. , next to last sentence.</b> Regional implementing interagency programs, such as DMMP should have the prerogative to make adhoc interim changes to protocols using best available science, on a project specific basis. The interim changes should be coordinated with the regional RSET team for evaluation and adoption/use in the Regional RSET Manual.	Chapter 07, Page 7-1	The Policy Committee is evaluating procedural mechanisms, such as periodic review meetings, to ensure that a regular forum is provided to maintain and update the SEF and incorporate best available science.
ODEQ	11/30/05	It would be helpful if a diagram or flowchart were provided in chapter 7 that illustrates the process for evaluating the results of the sediment tests.	Chapter 07, Page 7-1	Process flow charts are provided in Chapter 4.
NMFS	12/5/05	Paragraph 2, is very unclear. There is no direction on what the results of the elutriate test will yield and the managerial implications of exceeding 304(a) criteria. Furthermore, what if there are hits for which no 304(a) criteria exist?	Chapter 07, page 7-10, paragraph 2	Additional clarification has been provided in Chapter 11 regarding the implementation of elutriate testing procedures, consistent with existing federal guidance ("Green" Book and

Commenter	Date	Comment	Section	Resolution
				Inland Testing Manual; USEPA 1991, 1994). If the elutriate tests show significant detections of chemicals lacking water quality criteria, RSET will use best available science to interpret the test results, considering reasonable surrogate chemicals, relative toxicities, and the magnitude and frequency of detections.
ERDC	12/5/05	Page 7-11, Para 2: Replace "To provide data with sufficient accuracy and sensitivity" with "To generate appropriate and useable data".	Chapter 07, Page 7-11	Change made as suggested.
ERDC	12/5/05	Page 7-11, 1 <sup>st</sup> bullet: Without collection and analysis of field QC samples as part of the QC criteria, these data will not be of "high quality".	Chapter 07, Page 7-11	Comment noted. Field QA/QC protocols have been added to Chapter 6.
ERDC	12/5/05	Page 7-11, 2 <sup>nd</sup> bullet: Adherence to the criterion in the 2 <sup>nd</sup> bullet in the sediment evaluations appears rigid and would preclude decision-making for analytes in almost every sediment evaluation this reviewer has performed. What statements can be made regarding analytes that are rejected? What if several or multiple analytes are rejected in a class of compounds? What corrective actions can be taken at this point to address the resultant data gaps?	Chapter 07, Page 7-11	This bullet will be revised to indicate RSET will consider such data on a case-by-case basis if the project proponent and analytical laboratory have demonstrated they have taken all reasonable steps to control the Quantitation Limits. This policy has been in effect in the Pacific Northwest for many years and the regional laboratories have become proficient at meeting the program requirements, but situations occasionally arise when matrix interferences or other complications preclude the attainment of these data quality objectives.
ERDC	12/5/05	Page 7-11, 3 <sup>rd</sup> bullet: How are precision and accuracy measured? Without field QC samples, field accuracy will be nil. Please clarify what you mean by precision and accuracy in this context.	Chapter 07, Page 7-11	Comment noted. Field QA/QC protocols have been added to Chapter 6.
NWS	11/16/05	<b>Page 7-11, Section 7.8.</b> This section should be expanded to include the required quality control procedures such as matrix spikes/matrix spike duplicates, laboratory control samples, surrogates spikes, method blanks, replicates, reference materials, initial calibration, etc and the acceptance criteria for each of them. This is important because so many important decisions are based on the chemistry that it is imperative that the quality of the data be known.	Chapter 07, Page 7-11	This section has been revised to emphasize the need to include required quality control elements in the design of the sampling and analytical program. Specific procedures and acceptance criteria will need to be provided in a project-specific Quality Assurance Project Plan.
NWS	11/16/05	<b>Page 7-11, Section 7.8.1, MDL is less than SL1; RL exceeds SL1.</b> Please add something like the following to the end of this paragraph "However, it must be demonstrated that the laboratory all reasonable attempts	Chapter 07, Page 7-11	Change made as suggested.

Commenter	Date	Comment	Section	Resolution
		were taken by the laboratory including cleanup additional cleanup procedures, re-extraction, etc. to lower the RLs.”		
WDOE	11/30/05	Please note that sediment contaminant concentrations > MDL but < RL are generally used to make regulatory decisions.	Chapter 07, page 7-11, 3 <sup>rd</sup> bullet	Change made as suggested.
NMFS	12/5/05	Please note that toxicity equivalency factors (TEF) are valid only for tissue concentrations. TEFs based on sediment concentrations are not valid because bioaccumulation is not explicitly considered.	Chapter 07, page 7-12	In some cases, RSET believes TEFs are appropriate to apply to sediments as a cumulative risk index, and sediment TEFs have been effectively used at a number of sediment cleanup sites across the country. In addition, development of site-specific BSAFs may help to account for differential bioaccumulation of constituent compounds in a chemical group.
ODEQ	11/30/05	Section 7.8.3, Chemical Summation: Are there SLs for all of the groups listed in this section? A list of compounds that are in each group should be provided. Are SLs provided as TEFs?	Chapter 07, Page 7-12	A list of compounds that comprise each chemical group has been provided, as requested. Because SLs are based on benthic biological effects, TEFs are not generally applicable to these values.
ERDC	12/5/05	Page 7-13, Para 3: It is unclear from reading this section exactly which documents served as the source of the guidelines presented in Table 7-1. This becomes particularly confusing when one reads the 1 <sup>st</sup> sentence on Page 7-15, which indicates that screening levels were “based largely” on data from Ecology (2005) and Ecology (2003). Please clarify.	Chapter 07, Page 7-13	More explicit references have been provided for the values in Table 7-1 (see Section 7.8.1).
ODEQ	11/30/05	Section 7.9, Interpretive Guidelines: Freshwater screening levels SL1 and SL2 are discussed in this section, and values are presented in Table 7-1. DEQ has questions regarding the use of screening values, and the specific derivation of the values presented in the table.  Considerable differences are implied in how sediments at a dredge project are evaluated (Section 7.9.1) versus how sediments at a contaminated sediment site are evaluated (Section 7.9.2). For dredging, a concentration between the SL1 and SL2 values would require bioassays to show there is no toxicity before in-water disposal would be allowed. At a contaminated sediment site, concentrations between SL1 and SL2 would be considered low priority, and the site would receive no further consideration for active cleanup. We recommend that contaminated sediment sites be evaluated in a manner consistent with dredge projects. That is, a concentration between SL1 and SL2 would require	Chapter 07, Page 7-13 to 7-16	The text has been revised to provide greater flexibility for States to make cleanup decisions in consideration of SL1 and SL2 levels in accordance with their specific regulatory mandates.  RSET is committed to revising and updating the SQG values when critical additional data, including chronic data and/or benthic community studies, become available. Neither the Portland Harbor data nor Ecology’s proposed freshwater SQG validation study will be available in time for the initial issuance of the SEF.  RSET will continue discussions with its member agencies through the SQG Subcommittee as to what level of reliability/sensitivity would be acceptable to the various agencies and programs,

Commenter	Date	Comment	Section	Resolution
		<p>additional testing, such as bioassays, to show that there is no significant toxicity. The current method relies too much on sediment screening values that may not be sufficiently protective.</p> <p>This section also defines “minor adverse effects” as those that may be observed in the more sensitive groups of benthic organisms by using the SL2, also defined as the cleanup screening level (CSL) by Ecology (2003). However, the CSL values were developed using acute bioassay testing only. These responses may under predict the long-term biological effects associated with a contaminant present in the sediment. The assertion that effects at the cleanup screening level seen in short-term test is a “minor effects level” needs to be supported by benthic community data that would ground truth the laboratory bioassay results. Chronic effects would also need to be included.</p> <p>Regarding the use of the floating percentile method to develop sediment-screening values, DEQ is not confident that RSET has adequately evaluated the method proposed by Teresa Michelsen. We are therefore not confident that appropriate screening values have been derived. We have the following comments.</p> <ul style="list-style-type: none"> <li>• The draft levels developed for Washington DOE have not yet been evaluated or accepted.</li> <li>• We have not yet agreed on the levels of bioassay significance that should be used to derive the SL1 and SL2 screening values.</li> <li>• The data used to derive the proposed screening values in 2003 are regional values that do not contain recent data from the Portland Harbor Superfund site. The amount of sediment and associated bioassay data collected in the lower Willamette River will double the existing database. These data are now available and the larger database should be used in developing sediment-screening values.</li> <li>• Current screening values are based solely on acute bioassay studies. Chronic bioassay results should also be incorporated in the determination of screening values.</li> <li>• Other methods for developing freshwater sediment</li> </ul>		<p>and what SQG values are appropriate for use on an interim basis until a more robust set of chronic data is available.</p>

Commenter	Date	Comment	Section	Resolution
		<p>screening values, such as the logistic regression method, should be evaluated.</p> <ul style="list-style-type: none"> <li>• DEQ proposes different indicators of reliability to be used in the application of the floating percentile method, if this is the selected method. The proposed indicators are discussed in Attachment A.</li> </ul> <p>DEQ is continuing to evaluate the floating percentile method, and may have other suggested revisions.</p>		
NMFS	12/5/05	<p>For contaminated sediment projects, the SEF needs to establish a connection with the screening level guidelines, (SL1, SL2) and to the prey-base of ESA-listed species. What does surpassing these guidelines mean in the context of ESA-listed salmonids and indirect effects?</p> <p>Second paragraph, last sentence. Citations are needed to substantiate the statement that the “sediment quality values as regulatory screening levels have proven to be environmentally protective ...”</p>	Chapter 07, page 7-13, section 7.9	Biological effects data for certain representative salmonid prey species, such as Chironomus and Hyalella, are routinely collected during sediment quality assessments. The design of bioassay tests for additional prey species, and further evaluation of indirect effects on salmonids, especially considering their extensive migratory behaviors, is an appropriate subject for future research.
ODEQ	11/30/05	<p>Section 7.9.1 Dredging Projects; In the 1st paragraph, the 4th sentence reads: “Sediments with chemical concentrations exceeding SL1 levels and/or bioaccumulation criteria will require follow-up bioassay testing and/or bioaccumulation testing, respectively, which provides a more site-specific measurement of the potential for biological effects and the suitability of the material for unconfined open-water disposal.”</p> <p>Should the applicant also have the option of disposing of the sediments at a confined disposal facility without doing additional analyses? What is the process to do so? This should be clarified in Chapter 3.</p>	Chapter 07, Page 7-14	Yes, the applicant will have the option of exploring alternative disposal sites without the need for such testing, such as confined aquatic, nearshore, or upland disposal facilities where contaminants are isolated from aquatic communities. Text has been clarified.
NMFS	12/5/05	“SLI identified chemical concentrations that are either at or below levels which there is no reason to believe.” This sentence should be “that are either at or below levels at which there is no reason to believe.”	Chapter 07, page 7-14, line 1	Change made as suggested.
NMFS	12/5/05	“A separate evaluation based on reason to believe guidelines will be used to determine if bioaccumulation testing is required until such time as sediment BTs can be developed.” It is important to provide clear guidance for this process.	Chapter 07, page 7-14, paragraph 3	The interim process for establishing “reason to believe” for bioaccumulative compounds can be found in Section 9.3 and as a flowchart in Figure 9-1. A more specific citation to these sections has been added to Chapter 7.
NMFS	12/5/05	“The marine criteria promulgated under the SMS have been reliable for predicting the potential for adverse biological	Chapter 07, page 7-15,	Requested text changes and clarifications have been made. The TOC range for carbon

Commenter	Date	Comment	Section	Resolution
		effects ...?" The SEF needs to provide documentation for this statement. If there is not documentation, the statement should be removed. Marine criteria promulgated under the SMS refers to adverse <i>benthic</i> biological effects. This clarification should be made throughout the document to describe the applicability/limitations of both the RSET guidelines and the SMS criteria. Until salmonid-relevant analytic approaches and guidelines are developed, these contaminant values are lacking. Di Toro <i>et al.</i> (1991) use 0.2% at the lowest total organic carbon not 0.5%. What is the rationale for the highest value of 4%? Is this supported by literature?	section 7.9.2	normalization of 0.5 to 4 percent has been determined from the regional sediment database (Michelsen 1992; Bragdon-Cook, 1995) and is therefore preferable to the general theoretical considerations of Di Toro et al. Note that these TOC values apply only to marine environments and carbon-normalized SLs have only been developed for marine sediments. Freshwater environments may contain higher natural TOC levels.
WDOE	11/30/05	Revise text "Sites with sediment concentrations below the CSL ..." Such sites are lower priority but may still be considered for active cleanup.  Next para. The SQS are considered cleanup goals.	Chapter 07, page 7-15, section 7.9.2, 2 <sup>nd</sup> paragraph	Changes made as suggested.
WDOE	11/30/05	How will the RSET determine whether or not it is appropriate to normalize results to TOC?	Chapter 07, page 7-16	The SEF has been clarified to state that RSET will generally use dry-weight SLs for dredged material characterization studies, whereas carbon-normalized values are more appropriate for use at cleanup sites in the State of Washington, per State regulation, provided sediments are within an acceptable range of organic carbon concentrations. The two sets of values have been shown to provide similar levels of predictive reliability (Ecology 1988, 2003).
NMFS	12/5/05	NMFS disagrees with this general statement that if the sediment is less than 20% fines, it may be excluded because significant toxicity or bioaccumulation is not expected. Meador <i>et al.</i> (2004, 2005) found that bioaccumulation of arsenic, cadmium, and lead were highest in fish and invertebrates (arsenic) from sites with the lowest percentage of fines.	Chapter 07, page 7-2	RSET has conducted additional research on the reliability of the exclusionary criterion, which includes an organic carbon requirement (TOC < 0.5%) as well as a grain size requirement (percent fines < 20%). The existing database indicates sediments with less than 0.5% TOC have a very low probability (~5 to 7 percent) of adverse effects in bioassay tests, with the exception of certain mining-influenced watersheds east of the Cascades. These eastern mining regions with predominantly metals contamination will be disallowed from using the exclusionary criterion.  More generally, the appropriateness of using the exclusionary criterion will be determined on a

Commenter	Date	Comment	Section	Resolution
				case-by-case basis. In past studies, this criterion has generally been applied to very large and voluminous dredging projects (e.g., Columbia River channel sands) where existing sediment quality data has shown low or no potential for contaminant accumulation. In higher risk areas, i.e., areas with potential historical or ongoing sources of contamination, RSET will generally disallow the use of the exclusionary criterion until its appropriateness can be confirmed with site-specific sampling data.
NMFS	12/5/05	Guidelines for total low molecular weight-PAH and total high molecular weight-PAH (HPAH) are too high, especially HPAH. These HPAH levels would likely results in liver cancer in ground fish.	Chapter 07, page 7-4	The HPAH and LPAH guidelines have been developed for protection of benthic invertebrates. Whether liver cancer in groundfish is an appropriate toxicity endpoint for SQGs is a subject for future discussion in RSET.
NWS	11/16/05	<b>Page 7-4, Table 7-1.</b> The freshwater screening values SL1 and SL 2for cadmium are below or equal to the natural background soil metals concentrations (1 mg/kg) in Washington State for every region for which a background has been calculated. Since sediment is largely comprised of soil, this will have an effect on freshwater dredging projects ability to pass this screening even if they are not contaminated.	Chapter 07, Page 7-4	Comment noted. The screening level for cadmium has been adjusted upward to account for natural background concentrations in the Pacific Northwest, while maintaining the overall reliability of these guidelines.
ODEQ	11/30/05	Section 7.5.1, Table 7-1, Standard List of Chemicals of Concern: The numbers in this table should be clearly referenced in the notes defining SL1 and SL2, and the source of derivation. In addition, these numbers have measures of reliability associated with them, which should also be referenced. See also comment on Section 7.9	Chapter 07, Page 7-4	Comment noted. Additional work on establishing appropriate Freshwater SQGs and their underlying reliability basis is currently underway by the SQG subcommittee. The sources of the various screening level values are more explicitly referenced in Section 7.8.1.
WDOE	11/30/05	Section Grain Size Screening. Exclusionary status in any area/subregion must be based on substantial data and a clear analysis that justifies such status.	Chapter 07, page 7-4	See response to previous comment.
NMFS	12/5/05	In the DMEF, the summed DDT criteria was 9.6 ng/g dry wt. The SEF proposes 16 ng/g for pp dichlorodiphenyldichloroethylene, 9 ng/g pp dichlorodiphenyldichloroethane and 34 ng/g for ppDDT. Why were these values changed from the SEF? It is also worth noting that there are no guidelines for the op isomers of DDT, although recent studies suggest they may have estrogenic activity and immunotoxicity.	Chapter 07, page 7-5	The existing DMEF value of 6.9 µg/kg Total DDT was not a toxicity based value and was therefore in need of revision. The SEF values for pp-DDT, DDD, and DDE are based on the lowest of WDOE 1996 AETs (LAETs). It should be noted that the pp-DDT value of 34 µg/kg in the public review draft was in error and should actually be the SL2 value (2LAET); the SL1 value (LAET) should be 12 µg/kg.

Commenter	Date	Comment	Section	Resolution																				
				Although there are no guidelines currently available for the op-isomers of DDT, RSET will require these isomers to be analyzed in sediment testing programs to allow the development of future guidelines if and when it is determined to be appropriate.																				
NWS	11/16/05	<b>Page 7-6, Table 7-2.</b> Please specify that TBT in pore water is reported as the TBT ion.	Chapter 07, Page 7-6	Requested change has been made.																				
NWS	11/16/05	<p><b>Page 7-6, Table 7-2.</b> GFAA is an old method and the majority of labs no longer have the instrument or if they do they only have one with no backup. To actually run the method, the cost is will be higher, approximately 200% higher per element, and the turn-around-time will be longer. ICP-MS can achieve the required reporting limits. In fact for several of the elements, ICP would be sufficient. There is also an error in the table. ICP-MS is required to achieve the required reporting limit for lead. Below, I have provided recommended methods for each element:</p> <table data-bbox="457 792 730 1092"> <tr><td>Antimony</td><td>ICP-MS</td></tr> <tr><td>Arsenic</td><td>ICP-MS</td></tr> <tr><td>Cadmium</td><td>ICP</td></tr> <tr><td>Chromium</td><td>ICP</td></tr> <tr><td>Copper</td><td>ICP</td></tr> <tr><td>Lead</td><td>ICP-MS</td></tr> <tr><td>Mercury</td><td>CVAA</td></tr> <tr><td>Nickel</td><td>ICP</td></tr> <tr><td>Silver</td><td>ICP-MS</td></tr> <tr><td>Zinc</td><td>ICP</td></tr> </table> <p>The recommended reporting limits for metals are lower than necessary. In fact, they are lower than background and will cost more to achieve unnecessarily. Ion-trap GC/MS is an inappropriate for complex matrices such as sediments because it is a very sensitive but not a very selective detector in complex matrices. Thus it is better suited for very clean and simple matrices such as sea water. It is strongly recommended that ion-trap GC/MS not be allowed for the analysis of sediments since it is prone to: False positives False negatives due to inappropriate reporting limits</p>	Antimony	ICP-MS	Arsenic	ICP-MS	Cadmium	ICP	Chromium	ICP	Copper	ICP	Lead	ICP-MS	Mercury	CVAA	Nickel	ICP	Silver	ICP-MS	Zinc	ICP	Chapter 07, Page 7-6	The reviewer's comments are appreciated. The Chemical Analyte Subcommittee has revised and updated the recommended sediment analytical methods and reporting limits in consideration of the reviewer's comments and the current state of commercially available analytical technology.
Antimony	ICP-MS																							
Arsenic	ICP-MS																							
Cadmium	ICP																							
Chromium	ICP																							
Copper	ICP																							
Lead	ICP-MS																							
Mercury	CVAA																							
Nickel	ICP																							
Silver	ICP-MS																							
Zinc	ICP																							

Commenter	Date	Comment	Section	Resolution
ODEQ	11/30/05	Section 7.5.1, Table 7-2, Methods and Reporting Limits: This table has a recommended analysis and prep method associated with each contaminant. RSET should confirm that the method reporting limit and methods meet the needs for assessing in-water risk.	Chapter 07, Page 7-6	The SLs in Table 7-1 were explicitly considered in developing the recommended analytical methods and reporting limits in Table 7-2. See also response to previous comment.
WDOE	11/30/05	There have been several different approaches to assessing risk associated with exposure to TBT. Not all focus on concentrations of TBT in porewater, instead preferring to measure TBT in whole sediment and/or tissues of sensitive organisms	Chapter 07, page 7-8, last sentence	Comment noted. Bulk sediment TBT concentrations may have predictive value at some sites, and currently the recommended freshwater TBT criterion is on a bulk sediment basis. Table 7-2 has been revised to provide for either porewater or bulk sediment analysis of TBT, depending on project requirements.
NMFS	12/5/05	It says here that guidelines are predictive of direct toxicity for benthic and aquatic organisms. This is mainly true only for benthic and aquatic invertebrates, because fish and wildlife are not used in the bioassays that are the basis for these guidelines.	Chapter 07, page 7-8, paragraph 2	"Aquatic organisms" has been changed to "epibenthic organisms."
NMFS	12/5/05	Pyrethroids may also be a problem since they tend to accumulate in sediments. Pyrethroids testing should be required near areas of residential surface runoff, to be added to section 7.5.2 Chemicals of Special Occurrence. According to (Weston <i>et al.</i> 2005), residential surface runoff contributed to elevated sediment concentrations of pyrethroids which caused mortality to <i>Hyallela azteca</i> . Also PBDEs are potential chemicals of concern since they are bioaccumulative, in sediments, and are beginning to be linked with neurotoxicity, <i>etc.</i>	Chapter 07, page 7-9	In response to these concerns, Issue Papers on pyrethroids and PBDE's are being prepared in the Chemical Analyte Subcommittee to assess whether these chemicals warrant additional consideration in the SEF. However, RSET does not expect to require project proponents to conduct investigations on residential runoff. This type of research is more appropriately within the purview of regional monitoring programs.
NWS	11/16/05	<b>Page 7-9, Dioxins/furans.</b> When conducting definitive analysis for dioxin/furans, it is highly recommended that EPA Method 1613 be used rather than 8290. The main difference between the two methods is that EPA Method 1613 has additional labeled internal standards so that each 2,3,7,8-substituted PCDD/PCDF isomer can be related to an internal standard for identification and quantification purposes.	Chapter 07, Page 7-9	The SEF will allow both methods of dioxin analysis depending on project-specific requirements.
ODEQ	11/30/05	Section 7.6, Elutriate Testing: Please reference the statement that "if bulk sediment concentrations are above screening level (SL2) guidelines, elutriate testing may be required." Are there data that support the assertion that the SL2 levels are the appropriate values to trigger testing for direct toxicity? In addition, direct toxicity is not the only effect of concern during dredging operations. The testing	Chapter 07, Page 7-9	The discussion of elutriate testing has been moved to Chapter 11. References have been provided to substantiate the use of SL2 as an appropriate elutriate testing trigger. The supporting data are derived from program experience with dredging and in particular Superfund projects, both freshwater and marine,

Commenter	Date	Comment	Section	Resolution
		<p>procedures also need to include an analysis for bioaccumulation potential where these contaminants are present at levels of concern. Dredging is a mechanism where bioaccumulative contaminants can be re-suspended in surface water, and become available to aquatic organisms. This can lead to increased body burdens and effects, and should be considered as a part of the implementation risk of the operation. This may be of particular concern in water bodies where there is an identified watershed level risk, or for waterways on the 303(d) list. This pathway should be discussed, and alternatives to reduce the availability of these contaminants during dredging should be outlined (e.g., moving away from standard dredging to suction dredging). This can also feed in to Section 7.7.</p>		<p>where such testing has been performed on a wide range of contaminants and concentrations.</p> <p>Elutriate tests are designed to measure short-term dredging-induced water column impacts. The spatial scales (e.g., home ranges, harvesting areas) and temporal scales (e.g., lifetime exposures) of bioaccumulation pathways are inconsistent with the duration and intermittent nature of in-water construction operations, as outlined in federal guidance documents (USEPA and Corps, 1991, 1994; USEPA, 1991). In addition to considering the potential for short-term water quality impacts, the selection of mechanical versus hydraulic dredging is an engineering determination that must also consider site-specific project constraints (e.g. engineering feasibility, access, presence of debris, slope stability, equipment availability, disposal options, etc.).</p>
NMFS	12/5/05	<p>RSET needs a discussion about elutriate testing with NMFS about whether the proposed approach is reasonable and protective. The current suite of elutriate tests is quite limited; marine test organisms are echinoderms and bivalves. There are no fish test organisms. The freshwater test includes a fathead minnow, but these fish are not likely to be as sensitive as salmonids. Also, the endpoints used for the standardized tests are unlikely to be adequate for salmonids. NMFS is most concerned about sensitive behavioral endpoints that are affected by short-term exposure (e.g., olfaction with copper and pesticides).</p>	Chapter 07, page 7-9 and 7-10, section 7.6	<p>The elutriate tests (now discussed in Chapter 11) are designed to measure short-term dredging-induced water column effects. Initially, the dredging elutriate is analyzed for chemistry, and if necessary, follow-on elutriate bioassay testing may be conducted, in which case rainbow trout is one of the available and recommended test organisms (USEPA and Corps, 1994). NMFS' comment appears to be more directed at sediment-phase bioassays, rather than elutriate tests and elutriate bioassays. Designing sediment bioassays to be more representative of ESA species and their endpoints is an appropriate subject of future research.</p>
USFWS	12/21/05	<p>The P450 values are not really false positives but rather represent the total P450-related toxicity of the sample, and can include PAHs (if PAHs are not screened out prior to the biomarker analysis). The sentence is misleading to the reader and should be changed to discuss how the test should be used (to assess total toxicity of dioxin-like compounds, rather than just dioxins/furans). Readers could be discouraged from using the assay based on the information described in this paragraph.</p>	Chapter 07, Page 7-9, 1 <sup>st</sup> paragraph under <i>dioxins/furans</i>	<p>Comment noted and additional clarifying text has been added to this section of the SEF</p>

Commenter	Date	Comment	Section	Resolution
USFWS	12/21/05	Appropriate references should be added here rather than stating "program experience." The service still considers that a risk assessment should be completed which evaluates how disturbing contaminated sediment at the project site could impact listed species. Consideration for listed species may not have been included during the development of "program experience."	Chapter 07, Page 7-9, section 7.6, 1 <sup>st</sup> paragraph	The supporting data are derived from program experience with dredging and in particular Superfund projects, both freshwater and marine, where testing has been performed on a wide range of contaminants and concentrations. Essentially all of the regulatory experience at Superfund and more complex State cleanup sites in recent years has considered the listed species of interest in the Pacific Northwest.
NMFS	12/5/05	<p>Please provide the definition for 'SL.' Guideline values for aldrin, alpha-chlordane, dieldrin, heptachlor, and gamma-BHC (lindane) are not provided. What are these values?</p> <p>The RSET should incorporate guideline values for pyrethroid pesticides. These pesticide types are increasing in agriculture, commercial and residential use. In addition, they have recently been found at high concentrations in sediments in California (<a href="http://www.cdpr.ca.gov">www.cdpr.ca.gov</a>). Recent studies have found that numerous pyrethroid forms are acutely toxic to <i>Hyalella azteca</i> at concentrations slightly above analytical detection limits and that <i>Hyalella</i> growth is inhibited at concentrations below the LC50 (Amweg <i>et al.</i> 2005). It would be unconscionable to delay the incorporation of these highly toxic chemicals in this dredging and sediment cleanup evaluation process.</p> <p>Avoidance of incorporation would propagate Type II errors. If sufficient data are available to set guidelines then they should be incorporated as soon as possible. NMFS is confused and concerned about the process used to get new chemicals added to the list of required analytes, or to modify existing guidelines. The process for submitting the issue paper, reviewing through subcommittees, <i>etc.</i> does not ensure quick action, or any action.</p>	Chapter 07, pages 7-4 and 7-5, table 7-1	<p>Pyrethroids are currently being investigated as the subject of an Issue Paper in the Chemical Analyte Subcommittee. See also previous responses.</p> <p>Marine SL guidelines for the noted pesticides will be added to Table 7-1 based on updated Ecology AETs (WDOE 1996). However, neither carbon-normalized marine values nor freshwater values are currently available for these chemicals because they have not shown a strong correlation with toxicity in the Pacific Northwest data set. It appears there are too few locations with high enough concentrations to be able to develop reliable benthic effects thresholds for these chemicals.</p>
WDOE	11/30/05	<ul style="list-style-type: none"> <li>• Did the SQG Subcommittee consider the need to revise out-of-date marine AET-based guidelines/standards listed in this table?</li> <li>• Is the reason that certain VOCs are not listed in the table because it is presumed that they do not persist long in typical sediments? An alternative hypothesis is that VOCs are present in surficial sediment but are lost</li> </ul>	Chapter 07, pages 7-4 and 7-5, table 7-1	For established marine AET values promulgated under the Washington Sediment Management Standards, RSET did not revise or update any of the screening levels. For chlorinated pesticides (i.e., DDTs, chlordane, etc.) for which SMS criteria have not been established, RSET used best available data, primarily WDOE updates to AET

Commenter	Date	Comment	Section	Resolution
		<p>during sampling and/or sample processing.</p> <p>The proposed SL1 values for freshwater sediment have not been confirmed to be protective of chronic/sublethal effects or <i>in situ</i> benthic health. They should not be used (alone) to screen for all areas of potential concern or establish cleanup goals/levels. They may be used in conjunction with biological evaluations to determine area/site boundaries. Proposed values for SL1 should also be compared to regional background values.</p>		<p>values (WDOE 1996). Table 7-1 has been better referenced as to data sources (see Section 7.8.1).</p> <p>VOCs rarely contribute substantively to sediment toxicity because of their lack of persistence in sediments, combined with the fact that aquatic life toxicity criteria have not been developed for these chemicals at the national level (USEPA 2002); therefore, VOCs are not included on the standard list of COCs.</p> <p>Existing SL values are based on best available science. RSET is committed to revising and updating the SQG values when critical additional data, including chronic data and/or benthic community studies, become available.</p>
NMFS	12/5/05	It states here, "Exceedances of bioaccumulation criteria, or in the interim, elevations above reference, may trigger the need for bioaccumulation testing." Since very few bioaccumulation criteria have been established as yet, it seems that RSET will be using "elevations above reference" in most cases to decide if bioaccumulation testing is needed. How is reference to be defined?	Chapter 07, paragraph 2, last sentence	Elevation above reference will be more clearly defined as part of revisions to Chapter 9 currently being conducted.
ERDC	12/5/05	Table 7-1: The source of the guideline values should be included in a footnote at the end of this table.	Chapter 07, Table 7-1	Comment noted. Data sources for the guideline values in Table 7-1 have been cited in Section 7.8.1.
ODEQ	11/30/05	RSET should evaluate approaches other than the floating percentile method to determine the most appropriate screening method. Portland Harbor Superfund data are being evaluated by both the floating percentile method and the logistic regression method. RSET should consider conducting the same evaluations. Until a screening method is accepted, the SL1 and SL2 values should be removed from Table 7-1	Chapter 07, Table 7-1	The SQG subcommittee is continuing to hold discussions and build consensus with the member regulatory agencies as to what statistical methods and what levels of reliability/sensitivity would be acceptable to the various agencies and programs.
ERDC	12/5/05	Table 7-2: The text discusses RLs and MDLs on Page 7-11, but Table 7-2 reports MRLs. What are MRLs and how do they differ from RLs and MDLs? Please clarify.	Chapter 07, Table 7-2	Comment noted. Changes made as suggested. Note also the use of RLs has been changed to Sample Quantitation Limits (SQLs) consistent with EPA guidance (EPA 1989).
NMFS	12/5/05	<b>Toxicity bioassays.</b> Similarly, the current suite of toxicity bioassays is not necessarily protective of salmonids, other fish, or their prey base. The Bioassay Subcommittee is working on this issue, but no recommendations were	Chapter 08	Need recommendations from Bioassay Subcommittee for next draft of SEF.

Commenter	Date	Comment	Section	Resolution
		included in this version of the SEF because of time constraints. Before the finalization of the SEF, recommendations should be included, and new toxicity bioassays should be incorporated into the next version of the SEF.		
Port of Seattle	11/30/05	Bioassays: In DMMP there is the potential to test, hold, and/or "acclimate" samples that had a high potential for false positives due to ammonia and sulfides that would not be a long term toxic problem at the disposal site. To adequately assess this situation, pore water samples need to be run in the aquaria. This capability is not reflected or discussed in RSET and needs to be included.	Chapter 08	Need recommendations from Bioassay Subcommittee for next draft of SEF
ERDC	12/5/05	Section 8.2.4 would benefit greatly by having the data summarized in a table. A single table combining information from this section and the previous section would make the document a lot more user-friendly.	Chapter 08,	A table of interpretative criteria will be developed.
ODEQ	11/30/05	Footnotes: Capitalize the first word in each of the three footnotes.	Chapter 08, 8-2	Change made as suggested.
ODEQ	11/30/05	Section 8.2.1: Add the reference for PSEP 1995.	Chapter 08, 8-3	Reference added.
ODEQ	11/30/05	"PSSDA" should be "PSDDA." This occurs several times on this page and should probably be checked throughout the document.	Chapter 08, 8-7	Change made as suggested.
ERDC	12/5/05	pg 8-1, ¶1, lines 3-4: Is there an upper threshold at which the assessor has the option to call the sediment contaminated and forgo bioassay testing?	Chapter 08, Page 8-1	Project proponent always has the option of forgoing biological testing.
ERDC	12/5/05	pg 8-1, ¶2, lines 5-8: Again, is there an upper threshold option?	Chapter 08, Page 8-1	Project proponent always has the option of forgoing biological testing.
ODEQ	11/30/05	Section 8.1: Part of establishing "reason to believe" should be an assessment of bioavailability through the use of a bioaccumulation test in some cases (a level 1 task) for the very reason stated in paragraph two – quantifying chemical concentration alone is not always adequate in assessing bioavailability.	Chapter 08, Page 8-1	Comment noted.
ERDC	12/5/05	pg 8-2, ¶1: is there a plan to address confounding factors (e.g., such as porewater ammonia toxicity) that could result in false positives? In this case, will sediments be purged?	Chapter 08, Page 8-2	Need recommendations from Bioassay Subcommittee for next draft of SEF
ERDC	12/5/05	pg 8-2, 8.2.1, ¶1, bullet 1: Is Rhepox the first choice and the other amphipods are secondary choices based upon sediment / site specific factors. Please clarify. Again, what about ammonia toxicity issues?	Chapter 08, Page 8-2	Rhepox is first choice, followed by other two species.
ERDC	12/5/05	pg 8-2, 8.2.1, ¶1, bullet 1: Has any consideration been given to recommending <i>Leptocheirus plumulosus</i> and a standard	Chapter 08, Page 8-2	Leptocheirus is a non-native species and requires significant additional resources from the bioassay

Commenter	Date	Comment	Section	Resolution
		test organism. It is convenient to culture in the lab and is sensitive and closely associated with the sediment (does not build tubes).		laboratory to handle this species. Preference is given to native species for bioassay testing.
ERDC	12/5/05	pg 8-2, 8.2.1, ¶1, bullet 3: I believe tests assessing the embryonic development of echinoderms and bivalves are usually considered water column, porewater or elutriate toxicity tests (see Inland Testing Manual and ASTM guidance documents). Was this the intention?	Chapter 08, Page 8-2	The embryonic development of echinoderms and bivalves are standard components of the PSDDA and SMS process.
ERDC	12/5/05	pg 8-2, 8.2.1, ¶1, bullet 3: why not list "Mytilus species" rather than <i>Mytilus galloprovincialis</i> ? There are other <i>Mytilus</i> species that are just as testable (e.g., <i>M. edulis</i> , <i>M. trossulus</i> ) and the standard ASTM method is based upon <i>M. edulis</i> .	Chapter 08, Page 8-2	Change made as suggested.
ODEQ	11/30/05	Section 8.2.2, Freshwater Bioassays: Chronic amphipod or midge tests should be added to this list as is mentioned in the marine testing section above. There are tests available such as the <i>Hyalella azteca</i> and Chironomus 28- and 20-day tests. What does "under development" mean?	Chapter 08, Page 8-2	Need recommendations from Bioassay Subcommittee for next draft of SEF.
NMFS	12/5/05	NMFS appreciates the fact that the SEF includes the following statement: "Several additional tests are under development or review and may be added in the future." It would be appropriate for the SEF to also include language that discusses the limitations of the current system and types of tests that are under consideration.	Chapter 08, page 8-2, paragraph 1	Need recommendations from Bioassay Subcommittee for next draft of SEF.
NMFS	12/5/05	There should be some discussion about the adequacy of the existing tests. The marine bioassay section is very weak on sublethal effects. The development of additional sublethal tests should be a top priority for RSET. Also, under what circumstances would a lethality test ever be acceptable as an indicator of the potential for sediment to cause toxicity? The interpretation of the results for a lethality assay is not discussed. If sediment did not produce lethality, it should not be considered "non toxic."	Chapter 08, page 8-2, section 8.2.1	Need recommendations from Bioassay Subcommittee for next draft of SEF.
WDOE	11/30/05	Ecology is skeptical about the sensitivity, and therefore the appropriateness, of using <i>Ampelisca abdita</i> in standard ten-day survival tests. For various reasons, its use should be reserved for highly contaminated sites. Footnote 3. Should read "recommended echinoderm species".	Chapter 08, page 8-2, section 8.2.1	Need recommendations from Bioassay Subcommittee for next draft of SEF.
ERDC	12/5/05	pg 8-3, ¶2: Clarify if there is a recommended hierarchy for the selection of amphipods for whole sediment toxicity testing.	Chapter 08, Page 8-3	Need recommendations from Bioassay Subcommittee for next draft of SEF.
ERDC	12/5/05	pg 8-3, Section 8.2.2, ¶1, lines 1-3: 5 ppt is high for the	Chapter 08,	Need recommendations from Bioassay

Commenter	Date	Comment	Section	Resolution
		midge.	Page 8-3	Subcommittee for next draft of SEF.
ERDC	12/5/05	pg 8-3, Section 8.2.2, ¶2, lines 2-3: Why is the general statement about controls and test criteria needed if discussed in detail in section 8.2.3	Chapter 08, Page 8-3	Comment noted.
NMFS	12/5/05	Freshwater bioassays are very limited. They may be useful to some extent for effect on salmonid prey base. However, they would not deal with fish. The freshwater bioassay test using the midge, <i>Chironomus tentans</i> , may be the most relevant to the prey base of ocean-type Chinook salmon in the lower Columbia River. According to (Lott 2004) emerging chironomids were the predominant prey item for juvenile Chinook salmon occupying shallow water estuarine wetland habitats.	Chapter 08, page 8-3, section 8.2.2.	Comment noted.
WDOE	11/30/05	"And subsequent updates posted on the Corps' DMMO web site ..."	Chapter 08, page 8-3, top	Not sure what this comment is asking? Clarify location of edit.
ERDC	12/5/05	pg 8-4, lines 2: add positive control as an additional descriptor to reference toxicant	Chapter 08, Page 8-4	Change made as suggested.
ERDC	12/5/05	pg 8-4, Negative Controls: why not just state what the control criterion is (e.g., >90% survival)	Chapter 08, Page 8-4	Because negative control criterion differs by test.
ERDC	12/5/05	pg 8-4, Negative Controls: for the larval negative seawater control, is there guidance to cite for this?	Chapter 08, Page 8-4	Reference added. PSEP 1995.
ERDC	12/5/05	pg 8-4, Reference sediment: does the reference sediment also need to have similar grain size characteristics, etc. with the disposal site?	Chapter 08, Page 8-4	Yes.
ERDC	12/5/05	pg 8-4, Reference sediment, ¶2: providing guidance's for the test methods here would be helpful to the reader	Chapter 08, Page 8-4	Reference added.
ODEQ	11/30/05	Section 8.2.3, Reference Sediment: The first bullet indicates that the performance of toxicity tests is to be measured against a negative control AND a reference sediment. A reference sediment is not always practical at a cleanup site. If reference sediments are retained in the next draft of this document, please explain the allowable variance between the sample sediment and the reference sediment for the following parameters: total solids, total volatile solids, total organic carbon, ammonia, sulfides, and grain-size. If an appropriate reference area cannot be identified, then using the negative control as the sole reference should be an option.	Chapter 08, Page 8-4	Allowable variance between conventional parameters? Is there a definition of this or can it be quantified? Negative control use is very conservative. Need recommendations from Bioassay Subcommittee for next draft of SEF
NMFS	12/5/05	What is the positive control? Would this be a spiked sediment or sediment from a known area with high contamination? Which chemicals are present and at what concentrations? Where is sediment obtained?	Chapter 08, page 8-4, last paragraph	Positive controls are a standard part of any sediment bioassay program and are part of a QA/QC program. Additional clarifying text has been added.

Commenter	Date	Comment	Section	Resolution
WDOE	11/30/05	Positive control samples should perform within specified QC limits, e.g., range of EC50 values	Chapter 08, page 8-4, page bottom	Comment noted.
ERDC	12/5/05	Page 8-5, sediment larval bioassays, paragraph starting with "Initial counts will be made..." Paragraph finishes with, "final counts... will be made on 10-ml aliquots." Is this single aliquot, unlike initial aliquot which is conducted on minimum of 5 replicates?	Chapter 08, Page 8-5	Yes (PSEP 1995).
ERDC	12/5/05	pg 8-5, Water Quality Monitoring, ¶1: Any guidance on use of artificial seawater vs. natural seawater. The national guidance leaves this open.	Chapter 08, Page 8-5	Need recommendations from Bioassay Subcommittee for next draft of SEF
ERDC	12/5/05	pg 8-5, Water Quality Monitoring, ¶1: Should surrogate test chambers be set-up to measure porewater ammonia concentrations where ammonia may be a problem?	Chapter 08, Page 8-5	Need recommendations from Bioassay Subcommittee for next draft of SEF
ERDC	12/5/05	pg 8-5, Amphipod Bioassay, ¶1, line 2: I do not think emergence is an appropriate word for amphipods. It is more appropriate for <i>Chironomus tentans</i> .	Chapter 08, Page 8-5	Emergence endpoints have been identified for amphipods
ERDC	12/5/05	pg 8-5, Amphipod Bioassay, ¶1, lines 4-6: Awkward sentence. What is really meant by this? Should probably give a numerical example to clarify this (e.g., if the control mortality is 7%, than the performance standard for the reference sediment is 27% mortality. This also applies to the performance standards mentioned in the sections to follow.	Chapter 08, Page 8-5	Comment noted. Interpretative table will assist in clarifying language.
ERDC	12/5/05	pg 8-5, Sediment Larval Bioassay, ¶2: if I am reading this correctly, the reference performance criteria is 65% combined mortality and abnormalities. Can justification be given for such low survivorship to be acceptable?	Chapter 08, Page 8-5	See WDOE 11/30/05 comment below for clarification.
ERDC	12/5/05	pg 8-5, Sediment Larval Bioassay, ¶4: If the test is not necessarily 48 hours, what is the stopping point? When acceptability criteria are met for the control / reference? Please clarify.	Chapter 08, Page 8-5	Need recommendations from Bioassay Subcommittee for next draft of SEF.
ERDC	12/5/05	pg 8-5, Sediment Larval Bioassay: in such embryogenesis tests, sensitivity to porewater ammonia is very high. Can any guidance be provided in the case where ammonia may induce toxicity. What is the agency stance on toxicity reduction by zeolite additions or purging the sediment? Since ammonia is not typically a contaminant of concern, it is important to have a plan for mitigating it as a confounding factor so that bioassays do not result in false positives. In whole sediment toxicity tests, it is unlikely that aeration alone will reduce ammonia concentrations at a reasonable	Chapter 08, Page 8-5	Need recommendations from Bioassay Subcommittee for next draft of SEF.

Commenter	Date	Comment	Section	Resolution
		rate (>> 48 hours).		
WDOE	11/30/05	Bioassay-Specific Procedures - Marine. Please describe/summarize recent SMARM clarifications on how to minimize the potential influence of confounding factors such as ammonia. Sediment Larval Bioassay. Please specify that interpretive calculations are of percent normal survivors (no longer combined abnormality and mortality) and that they are relative to initial stocking density (more conservative) or normal survivors at end of the seawater control exposure.	Chapter 08, page 8-5	Recent SMARM discussion included.
NMFS	12/5/05	The control has standard of 10% mortality while the reference has standard of 20% mortality greater than the control. Up to 30% mortality is considered acceptable. If the standard is 30% mortality for reference sediments/seawater control it seems it would require quite a strong effect to show significant difference. Would a 30% reduction in the prey base really be an acceptable effect?	Chapter 08, page 8-5, paragraph 2	Need recommendations from Bioassay Subcommittee for next draft of SEF
ERDC	12/5/05	Page 8-6, Midge bioassays, need "or" between "0.6 mg minimum mean weight" and "0.48 mg mean ash-free dry weight". Also, is it 0.6 mg minimum mean WET weight?	Chapter 08, Page 8-6	Change made as suggested.
ERDC	12/5/05	pg 8-6, Neanthes growth test, ¶1: will survival also be assessed?	Chapter 08, Page 8-6	Survival is always measured.
ERDC	12/5/05	pg 8-6, Amphipod bioassay, ¶4: for consistency with other sections, mention <i>H. azteca</i> by name.	Chapter 08, Page 8-6	Change made as suggested.
ERDC	12/5/05	pg 8-6, Section 8.2.4, ¶1, line 4: Clarify that statistical comparisons are to the reference, not control (if this is the case), to determine in test sediments pass or fail the bioassay.	Chapter 08, Page 8-6	Depends on whether reference sediments meet criteria, or if you must default to control.
ODEQ	11/30/05	Section 8.2.4, Bioassay Interpretive Criteria: A definition of "ecological threat" and how it is determined should be included. Freshwater chronic tests should be used in the "one hit / two hit" criteria interpretation.	Chapter 08, Page 8-6	Re-define "ecological threat" as adverse impacts. Freshwater tests are only currently available for acute exposure endpoints.
WDOE	11/30/05	This chapter would benefit from having one or more tables compiling the performance and interpretive criteria for these bioassays. Section 8.2.4. The "criteria" contained in this section are not consistent with the SMS rule, e.g., one- and two-hit failures, definition of "statistically different" relative to negative control.	Chapter 08, page 8-6	Performance criteria table has been added.
NMFS	12/5/05	This is not a good sublethal test. This species does not ingest sediment and has to be fed. A good sublethal test for benthic invertebrates would use a species that ingests sediment and does not depend on additional food.	Chapter 08, page 8-6, top of page	Need recommendations from Bioassay Subcommittee for next draft of SEF.

Commenter	Date	Comment	Section	Resolution
		Freshwater. <i>Hyalella</i> does not ingest sediment and is not a good candidate to assess the toxic potential of sediment.		
ERDC	12/5/05	pg 8-7, ¶1, line 2: for clarification, is the statistical comparison to the control or the reference or both?	Chapter 08, Page 8-7	Depends on whether reference meets criteria.
ERDC	12/5/05	pg 8-7, ¶2: for the two-hit failure, clarify what to do in the case that the endpoint reduction is not statistically significant but exceeds bioassay specific guidelines (e.g., > 20% reduction relative to the reference sediment for amphipods).	Chapter 08, Page 8-7	Biological interpretation criteria table has been added which should help clarify this question.
ODEQ	11/30/05	Section 8.2.4, Paragraph above Marine Bioassays: In the discussion of a "statistically different" response, the text states that two conditions must be met to make the determination. First, the response in the tested CS or in the tested DMMU must differ from the control by more than 20 percent. Second, a statistical comparison between mean test and mean reference responses must show a significant difference. It is unclear why the first requirement is here – a test sediment may be statistically different but not greater than 20 percent different from control. By requiring a 20 percent difference in responses, the process may be screening out low responses. Responses that meet only the second condition – statistical difference -- should be included in the interpretation.	Chapter 08, Page 8-7	Need recommendations from Bioassay Subcommittee for next draft of SEF.
ODEQ	11/30/05	The alpha levels required for the Marine Bioassays and Freshwater Bioassays are all 0.05, except for the marine sediment larval bioassay, which is 0.1. Please provide the rationale or data on which this decision is based. The alpha levels represent the probability of making incorrect conclusions that the treated sample is toxic or contains chemical residues not found in the control or reference sample (Type 1 error). By setting this probability low (0.05), the likelihood that one erroneously concludes there are no differences among the mean responses in the treatment, control or reference samples (Type 2 error) increases (low power). Type 2 errors would lead to conclusions that the sample is not toxic (or different from control or reference), when in fact there is a difference. Type 2 errors are important to minimize in environmental investigations, since, if left undetected, these errors can lead to continued short- and long-term effects (ASTM 2003; EPA 2000a). In order to avoid this, an alpha of 0.1 should be used, which would increase the power of the test and the probability of detecting a reduction relative to the control mean.	Chapter 08, Page 8-7 and 8-8	Need recommendations from Bioassay Subcommittee for next draft of SEF.

Commenter	Date	Comment	Section	Resolution
NMFS	12/5/05	The determination of a 'statistically different' response involves two conditions: first, the response in the tested CS or in the tested DMMU must be greater than 20% different from the controlled response; and second, a statistical comparison between mean test and mean reference responses must show a significant difference. The 20% level of effect is developed for the regulation of aqueous effluent under the National Pollution Elimination Discharge System Program in the Clean Water Act (CWA), not the ESA. Since implementation of the SEF should be minimizing adverse impacts to threatened and endangered species and EFH, a 20% reduction in any ecological assessment endpoint relevant to these trust resources is not acceptable (Suter <i>et al.</i> 2000). Juvenile growth test. Why are all these conditions imposed before the test is considered a 'hit'? If the results are significantly different from the mean reference sediments, why not consider that a 'hit'? For <i>Neanthes</i> , the culture conditions should not be compared to the growth found for the reference test. Also, because this species is fed, the feeding regime has to be identical between the test and reference sediment. The same issue holds for the Midge test on page 8-8. For all of these tests, the negative control sediments need to be thoroughly defined and an explanation is needed for why they should be used to assess performance for the test and reference sediments. In many cases, the negative control sediment will likely be substantially different than test or reference sediment. Comparing growth in sediments that vary in TOC, grain size, and other important parameters will likely lead to large difference in growth performance.	Chapter 08, page 8-7, middle paragraph	Need recommendations from Bioassay Subcommittee for next draft of SEF.
ERDC	12/5/05	pg 8-8, ¶1: it would be useful if the normalization equation for sediment larval bioassays.	Chapter 08, Page 8-8	Change made as suggested.
ERDC	12/5/05	pg 8-8, ¶1: what is the justification for the alpha value of 0.10 vs. 0.05 for the other tests?	Chapter 08, Page 8-8	Need recommendations from Bioassay Subcommittee for next draft of SEF.
ERDC	12/5/05	pg 8-8, section 8.3, ¶1, line 2: should the reference sediment also be comparable to the disposal site?	Chapter 08, Page 8-8	Yes.
ERDC	12/5/05	pg 8-8, section 8.3, bullet 4: should reference sediments be wet sieved when the site sediments are not. What about press sieving? According to the Inland Testing Manual:	Chapter 08, Page 8-8	Wet sieving of both test and reference sediments are proposed to establish a preliminary understanding of grain size characteristic. It is not proposed that the sediments that are sieved be retained for biological testing purposes.

Commenter	Date	Comment	Section	Resolution
		<p><b>Whole sediment:</b></p> <p>The sediment and interstitial waters of the proposed dredged material or reference sediment that have had minimal manipulation. For purposes of this manual, press-sieving to remove organisms from test sediments, homogenization of test sediments, compositing of sediment samples, and additions of small amounts of water to facilitate homogenizing or compositing sediments may be necessary to conducting bioassay tests. These procedures are considered unlikely to substantially alter chemical or toxicological properties of the respective whole sediments except in the case of AVS (acid volatile sulfide) measurements (EPA, 1991a) which are not presently required. Alternatively, wet sieving, elutriation, or freezing and thawing of sediments may alter chemical and/or toxicological properties, and sediment so processed should not be considered as whole sediment for bioassay purposes.</p>		
NMFS	12/5/05	This is the methodology for grain size analysis for % fines, not how to prepare reference sediment for testing.	Chapter 08, page 8-8 bottom, page 8-9 top	Wet sieving is proposed just to identify reference sediment with similar grain size/% fines content, not for preparation for biological testing. It is not proposed that the sediments that are sieved be retained for biological testing purposes.
ERDC	12/5/05	pg 8-9, ¶2, lines 5-6: the default to select the coarser grain size should be contingent on the test organism used.	Chapter 08, Page 8-9	Comment noted.
NMFS	12/5/05	These guidelines do not seem very protective. NMFS is interpreting this as for 'one hit' you would have to have at least 60% mortality, and for 'two hit' you would also have to have a fairly high mortality levels since they must be significantly higher than 30%. Similarly, for the juvenile infaunal growth test, you would need to growth rate reduced by 60% for a hit, and for the freshwater test would need at least 45-50% mortality for hits.	Chapter 08, paragraphs 1 & 2	RSET is proposing established PSSDA/SMS interpretative criteria
ERDC	12/5/05	Section 8 (general) all references seem to be missing from the reference listing (Section 15)	Chapter 08, Section 8	References added.
ERDC	12/5/05	Scientific names not always italicized (see page 8-2 in particular)	Chapter 08, Section 8.2	Change made as suggested.
ERDC	12/5/05	Section 8.2.4 need to work on section RE "statistically significant" responses. For one-hit failure, I believe the two-condition definition provided at the end of the sections OK (20% difference from control, plus statistical comparison is significant), but in defining "Two-hit Failure" on page 8-7, the words "significantly different " are used again and I believe in this context they mean "significant" as in statistical comparison ONLY (alpha/p value), not the 20% difference form control. Since the following paragraphs give an explicit definition of how "statistically different" is defined, this needs to be clarified.	Chapter 08, Section 8.2.4	Need recommendations from Bioassay Subcommittee for next draft of SEF.

Commenter	Date	Comment	Section	Resolution
ERDC	12/5/05	Consider elimination of the discussion on the potential derivation of the BT until these approaches have been more thoroughly evaluated. Currently I am concerned the approaches are extremely conservative and will lead to trigger values that will require bioaccumulation testing and analysis for all sediments.	Chapter 09	This discussion needs to be included so that agencies and stakeholders can comment on the calculation methods as they develop. Final values will not be adopted until they have been ground-truthed for practicality and subjected to usability testing. These methods will be revised and finalized as appropriate, based on public comment and testing.
ERDC	12/5/05	The list of bioaccumulated contaminants should consider metabolism, trophic transfer, volatility, and ability to measure the compounds in tissue.	Chapter 09	Many of these factors have been assessed indirectly by only listing those compounds that are actually found in regional tissues, eliminating those that are highly volatile or quickly metabolized. All List 1 compounds have been evaluated to ensure that standard methods exist for analysis. Methods for selecting and categorizing the BCOCs are described in more detail in the Technical Appendix, which can be found at <a href="http://www.nws.usace.army.mil/publicmenu/DOCUMENTS/BCOC_Technical_Appendix_090804.pdf">http://www.nws.usace.army.mil/publicmenu/DOCUMENTS/BCOC_Technical_Appendix_090804.pdf</a>
Floyd Snider	11/30/05	The most onerous and least clear recommendations of the SEF involve bioaccumulation. In lieu of tissue bioaccumulation triggers (BTs), which are cited as being under development, this manual appears to loosely specify a much more difficult and vague process that appears to guarantee bioaccumulation testing at most sites to qualify for open-water disposal. Not only does it specify more expensive testing, but the approaches listed will not “screen out” any bioaccumulative contaminants of concern (BCOCs).	Chapter 09	<p>The interim approach described is an attempt to unify the ad hoc approaches already being used to assess bioaccumulation and incorporate as much as possible of what already is being done on a case-by-case basis and what is recommended in national manuals. For example, RSET adopted the BCOC list which had already been developed by the DMMP. We do believe that looking at tissue-level risks on a watershed basis will allow us to focus on only those contaminants actually present at levels of concern in a watershed. However, a dry run and ground-truthing of the process will be conducted, and costs as well as detection limits for various possible analytical methods are being included in the SEF.</p> <p>Suitable reference areas for Puget Sound have already been defined and can be found in the document referenced in that section. The agencies are aware of the need to identify</p>

Commenter	Date	Comment	Section	Resolution
		<p>Furthermore, the concept of “elevation above reference” on Page 9-6 is particularly vague. Instead of suggesting several suitable reference sites by region or waterbody, this forces the permittee to first identify and then negotiate an appropriate reference site. This absolutely requires permittees, some of whom have limited resources, to hire scientists to perform expensive evaluations.</p> <p>For small projects (defined as projects less than 10,000 cubic yards), the SEF states that RSET may (at their discretion) allow alternative approaches, such as comparison of sediment concentrations to those already at the disposal site. This seems like a more reasonable approach in general, and would be a better approach in the absence of tissue BTs.</p> <p>The additional expense and uncertain process will undoubtedly encourage landfill disposal of sediments, which is an unnecessary expense and an arguably less beneficial use of the material. Importantly, this guidance does not appear to be focused on the maintenance dredging question of whether the sediments would cause a bioaccumulation risk at an identified openwater disposal site. Instead, the guidance asks broader questions about risks to aquatic dependent wildlife and human health, when in fact the maintenance dredging scenario involves effects at an openwater disposal site, a more fixed and constrained scenario. Again, this overly broad focus suggests that the community would be better served by a manual focused on maintenance dredging, or else that community will be forced to perform overly broad assessments that are largely irrelevant to their issues at hand.</p>		<p>reference areas in other regions and are working toward that goal.</p> <p>Small dredging projects (size depending on ranking) are exempt from bioaccumulation testing as well as from bioassay testing.</p> <p>The SEF is intended to address cleanup of contaminated sediment sites as well as dredging projects, which is a departure from previous manuals. We did receive a number of comments that the division is not as clear as it could be, especially where there are legitimate differences between the two processes. In this round of revisions we have attempted to make a number of these areas more clear.</p> <p>Final BTs will not be available this year, as a result of a shift in funding priorities based on the comments we received. They will be added as soon as possible.</p>

Commenter	Date	Comment	Section	Resolution
		We would also strongly suggest that the final SEF include tissue BTs.		
NMFS	12/5/05	The information for assessing bioaccumulation of metals, although difficult, is insufficiently addressed in this chapter.	Chapter 09	As far as we are aware, there is no reliable way of assessing the potential for metals bioaccumulation, other than making some basic assumptions about which metals are likely to bioaccumulate based on having organic forms in the aquatic environment. These metals have been included in the appropriate BCOC lists based on whether or not they are observed in regional tissues and have known toxicity. Additional approaches can be added as they become available.
WDOE	11/30/05	Ecology generally supports both the final and interim approaches to evaluating risk due to exposure to bioaccumulative COCs in sediment that is described in this chapter. However, there are many ways to approach evaluating risk to benthic organisms, fish/wildlife, and humans associated with exposure to bioaccumulative COCs in contaminated sediments. As such, a single approach may not be appropriate for all sites, whether cleanup or navigation.  The chapter would benefit from inclusion of two flow/process diagrams: one showing how risk associated with exposure to bioaccumulative COCs in disposal site sediment is to be assessed in navigation dredging programs and the second showing how <i>in situ</i> risk is to be assessed.	Chapter 09	At the moment, we do not anticipate significant differences between how dredging and cleanup sites would be assessed, with respect to the flow charts and overall decision process for how the TTLs and sediment BTs would be used. There will of course be differences in sampling procedures and possibly also in exposure scenarios, which will be discussed as these sections are further developed.
ODEQ	11/30/05	Par. 1, 3 <sup>rd</sup> sentence: Suggest it be rewritten to read: "...have not been fully evaluated or finalized by either dredging or cleanup programs in the region."	Chapter 09, 9-1	Change made as suggested.
ODEQ	11/30/05	Bioaccumulation triggers need to be developed for use in dredge projects.  At the bottom of the page it should be mentioned that special testing may also be required in cases where Aldrin, PAHs, <i>etc.</i> are found.	Chapter 09, 9-12	RSET is working as quickly as possible to develop BTs for all pathways, dependent on resource constraints.  It is not clear what special testing would need to be conducted for these additional compounds; rather they would be analyzed using the normal sediment chemistry methods. Compounds that are not bioaccumulative would need to be addressed using SQGs and/or bioassay testing.
ODEQ	11/30/05	Figure 9-1: This figure should show more clearly which	Chapter 09,	Change made as suggested.

Commenter	Date	Comment	Section	Resolution
		steps in the process are the responsibility of the Agencies (above the first gray dotted line and below the "Conduct bioaccumulation testing" box) and which are the responsibility of the Project Proponent or Responsible Party (below the gray dotted line and above the tissue results above BTs? Box).	Figure 9-1	
ERDC	12/5/05	Page 9-12, Page 9-15 Paragraph 3: I do not recommend using bioaccumulation data to protect benthos from adverse effects. These effects are most easily determined directly using a toxicity assay.	Chapter 09, Page 12	There is debate on this point among committee members. However, whether or not one believes it is appropriate, it is true that TRVs are generally developed from laboratory data that includes both fish and invertebrates, and therefore would be protective of both.
USFWS	12/21/05	It should be stated here that once bioaccumulative contaminants have been documented in tissue from a water body, there is reason to believe a concern exists. Therefore, any concentrations in sediment at a project site must be carefully evaluated (the evaluator will have to assess what their project will contribute to bioaccumulation risk based on the baseline concentrations already found in tissues in the water body). In addition, contaminants resuspended by dredging or disposal could be contributing (in combination with other sources) to levels of concern; they do not have to reach levels of concern in and of themselves at a project site. This needs to be added to the second to the last sentence.	Chapter 09, Page 9-1, 2 <sup>nd</sup> paragraph	<p><i>[This comment was originally marked as being for Ch. 7 – it actually refers to Ch. 9]</i></p> <p>It is intended that eventually sediments will also have risk-based BTs to allow a rapid evaluation of the potential for a site or dredging sediments to contribute to elevations in tissue. Until then, comparison to reference concentrations for sediments is appropriate. This clarification has been added to the text and is described in greater detail later in the chapter.</p>
ODEQ	11/30/05	<p>Section 9.1, Overview, first sentence: The text states that reason to believe is related to a project or site contributing to chemicals in "regional" invertebrate or fish tissues. Regional should be defined here.</p> <p>For some cleanup sites, bioaccumulative contaminants may</p>	Chapter 09, Page 9-1	<p>The Bioaccumulation Subcommittee discussed the meaning of the term "regional", and found it difficult to develop a narrative description that would apply in all areas of the three states. More clarification will be provided along with some examples, later in the chapter. Beyond that, RSET expects that it will be clearer to simply develop a list of regions and append it to the SEF.</p> <p>A clearer distinction will be made between dredging projects and cleanup sites in terms of the need to evaluate localized effects.</p> <p>It does not appear necessary to require bioaccumulation testing for all projects. The "reason to believe" approach is protective without being unduly burdensome.</p>

Commenter	Date	Comment	Section	Resolution
		<p>be harmful to aquatic life, aquatic dependent wildlife, or human consumption on a scale smaller than regional. DEQ must also evaluate the potential for localized effects (in the locality of the facility).</p> <p>Reason to believe should be supported with site-specific bioaccumulation testing (if necessary) that shows definitively that there is a “reason not to believe” there is a bioaccumulation risk at the site (or locality of the facility).</p>		
ODEQ	11/30/05	<p>There are three basic methods to evaluate bioaccumulation potential:</p> <p>The organisms analyzed for toxic chemicals as part of the “In situ Bioaccumulation Testing” and “Collection of Field Organisms” testing would be exposed only to the toxic chemicals in the biologically active area of the sediments and not to the toxic chemicals in the sediments deeper than the biologically active area. Therefore, the test organisms would not be exposed to the toxic chemicals in deeper sediments that could potentially be disposed of in-water as part of a dredge project. This is a problem for evaluating the potential for bioaccumulation of toxic chemicals from sediments dredged and disposed in-water as part of a dredge project. It should be made clear that the testing must be able to evaluate all likely routes of exposure outlined in the conceptual site model.</p> <p>When performing “Laboratory Bioaccumulation Testing” some contaminants may not reach equilibrium between the sediments and tissues of the test species over the duration of the test (e.g., 28 days). This would be pronounced for compounds with a log Kow around 6 - 8. Discussion should be included to address this, including the applicability and recommended correction factors to estimate steady-state values from the laboratory exposure for these contaminants (USEPA and USACE 1998; USEPA 2000b).</p>	Chapter 09, Page 9-1	<p>The text has been revised to reflect this important point.</p> <p>The concern expressed in this comment is valid, however, it is better addressed in Section 9.4. Additional text has been added describing alternative approaches and references for evaluating steady-state under these circumstances.</p>
USFWS	12/21/05	It should be stated here that once bioaccumulative contaminants have been documented in tissue from a water body, there is reason to believe a concern exists. Therefore, any concentrations in sediment at a project site must be carefully evaluated (the evaluator will have to assess what their project will contribute to bioaccumulation risk based on	Chapter 09, Page 9-1, 2 <sup>nd</sup> paragraph	

Commenter	Date	Comment	Section	Resolution
		the baseline concentrations already found in tissues in the water body). In addition, contaminants resuspended by dredging or disposal could be contributing (in combination with other sources) to levels of concern; they do not have to reach levels of concern in and of themselves at a project site. This needs to be added to the second to the last sentence.		
ERDC	12/5/05	Page 9-10. Paragraph 2, last sentence missing a “.”	Chapter 09, Page 9-10	Change made as suggested.
ODEQ	11/30/05	It should be noted that bioaccumulation testing is not required if the sediments are removed such that the CoCs are no longer detected.	Chapter 09, Page 9-11	Change made as suggested.
NMFS	12/5/05	NMFS is not supportive of <i>Corbicula</i> as the first choice for <i>in situ</i> assessments of bioaccumulation potential in freshwater. If an appropriate species can not be found, perhaps <i>in situ</i> analysis should be dropped in favor of lab bioaccumulation testing with <i>Lumbriculus</i> .  Last paragraph. What are the Seattle dredged material management plans BTs for polychlorinated biphenyls (PCB) and tributyltin and how do these compare with NMFS'? NMFS could not find the values in the document.	Chapter 09, page 9-11 and last paragraph	It would be helpful to have more detail on the reasons why <i>Corbicula</i> is not supported by NMFS, as a wide variety of considerations went into its selection (see RSET White Paper #20 on <i>in situ</i> testing).  A laboratory testing species in addition to <i>Lumbriculus</i> is also needed, as there are issues with the limited tissue mass available from laboratory bioaccumulation tests with this species.  The most recent DMMP BTs can be found on their website under Bioaccumulation Updates: <a href="http://www.nws.usace.army.mil/PublicMenu/Doc_list.cfm?sitename=dmmo&amp;pagename=Bioaccumulation">http://www.nws.usace.army.mil/PublicMenu/Doc_list.cfm?sitename=dmmo&amp;pagename=Bioaccumulation</a>
ERDC	12/5/05	Page 9-12: Paragraph 1 and paragraph 3 are redundant	Chapter 09, Page 9-12	Comment appears to be on an earlier version of the document.
NMFS	12/5/05	Kudos to RSET for including ESA-listed species as a receptor for establishment of bioaccumulation triggers.	Chapter 09, page 9-12	Comment noted and appreciated. One of the most important purposes of the SEF is to integrate ESA concerns into the everyday decision-making process.
EPA	11/14/05	<b>Page 9-13, Section 9.7.2 (Bioaccumulation Triggers for Sediments), second paragraph:</b> I suggest using the phrase “determining the effects of dredging residuals” rather	Chapter 09, Page 9-13	Change made as suggested.

Commenter	Date	Comment	Section	Resolution
		than “effects of a spill” at the end of the first sentence in this paragraph.		
ODEQ	11/30/05	Bottom of the page: Why are the BSAFs at the disposal site more important than the BSAFs at the dredging site? After all, the contaminants are sorbed to the sediment from the dredging site, not the contaminants at the disposal site.	Chapter 09, Page 9-13	Additional explanation provided in the text.
USFWS	12/21/05	The service disagrees with the statement “...the most relevant BSAF would be at the disposal site...” A BSAF would be appropriate and relevant for any part of sediment analysis, and further discussion is needed to address this issue. As mentioned in earlier comments, the service believes there is a complete pathway for bioaccumulative contaminants released during the dredging operation.	Chapter 09, Page 9-13, last paragraph	Additional explanation provided in the text.  The complete pathway for bioaccumulation during dredging has also been added to the SEF.
NMFS	12/5/05	A significant regression is not necessarily a requirement for determining a BSAF. There is sufficient variability in time and space, thus a regression may be difficult to obtain. That is no reason to forgo developing a solid mean value with sufficiently low standard error. If there is peer-reviewed literature on this subject, it should be used to support this point.  Last paragraph. The most relevant BSAF may not be the disposal site because high concentrations may cause a toxic response that will affect bioaccumulation and the BSAF.	Chapter 09, page 9-13, section 9.7.2 and last paragraph	The text has been revised to allow calculation of a BSAF using tissue/sediment pairs if the data are sufficient. Finalization of EPA guidance on calculation of BSAFs is forthcoming and will be incorporated once completed.  The comment is unclear – generally speaking, high concentrations that would cause toxic responses are not present at the open-water disposal sites. By definition, the level of effects allowed at the disposal sites is low, and monitoring has supported that this is indeed the case.
ERDC	12/5/05	Page 9-14. Paragraph before section 9.6.1.3. “In contrast, ERED database contains approximately 4000 records.” This information is out of date. ERED is continually growing, and currently contains more than 10,600 records.	Chapter 09, Page 9-14	This change was made in a previous round of editing.
ODEQ	11/30/05	The paragraph right above section 9.7.3 states: “Because of both environmental and programmatic differences, it is not necessary or even possible to use the same approach or have the same criteria for bioaccumulation in sediments. It is important that all programs and agencies use the same tissue BTs, and work towards meeting these watershed-wide values in a manner that best meets their project needs.” This paragraph needs to identify the environmental and programmatic differences that would affect bioaccumulation approaches and criteria.	Chapter 09, Page 9-14	Examples were added to the text.
USFWS	12/21/05	The method described here is possibly a good technique to evaluated dredging as well, especially if the dredging activity	Chapter 09, Page 9-14, 2 <sup>nd</sup>	Revisions made to reflect this idea.

Commenter	Date	Comment	Section	Resolution
		or disposal operation is considered a source, and then its contribution in terms of mass quantified. This method would likely be sufficient enough to meet scientific rigor required from an ESA consultation.	paragraph, last sentence regarding spatial analysis using GIS	
ERDC	12/5/05	Page 9-15, second to the last paragraph, second sentence is poorly phrased and confusing to the readers. "This should not be confused with implying that a chemical can cause toxicity without bioaccumulating at all". From what I see, the gist of the section is that many compounds ARE toxic without having to bioaccumulate, so the sentence appears to erroneous and contradicts the remainder of the section.	Chapter 09, Page 9-15	Change made as suggested.
ERDC	12/5/05	Page 9-16: paragraph 2; use of behavioral endpoints in deriving a BT will make the value extremely low (resulting in almost all material requiring testing). Secondly if you use behavior, how do you justify excluding a large set of sublethal and biochemical data?	Chapter 09, Page 9-16	Review of the data set to date suggests that behavioral endpoints are within the range of other endpoints observed, and the number of such studies that has been adequately peer-reviewed is not large. Behavioral endpoints are included because they typically have a direct and obvious effect on the organism's ability to function. Many sublethal and biochemical endpoints are still unclear as to their overall effect on individuals or populations.
ERDC	12/5/05	Page 9-16, second paragraph, first sentence. "The toxicity of some compounds is enhanced by biotransformation (biological, chemical or physical) after they have been bioaccumulated". Pet peeve... Biotransformation is biologically mediated- does NOT include chemical/physical transformation. Alter to "enhanced by transformation".	Chapter 09, Page 9-16	Change made as suggested.
ERDC	12/5/05	Page 9-16, missing end parenthesis in first full paragraph, sentence beginning with "These variations cut across taxonomic classes (e.g., some benthic invertebrates rapidly...".	Chapter 09, Page 9-16	Revisions made in a previous round of edits.
ODEQ	11/30/05	Section 9.8.1.1 and Section 9.8.1.6, Protocols for the Development of Tissue Bioaccumulation Triggers: It is unclear if RSET is moving forward with implementing the recommendations from the RSET bioaccumulation subcommittee (e.g., calculating BTs that include sensitive endpoints such as behavioral studies. Please be explicit with the goals and levels of protection for the program. It is unclear if the species sensitivity distribution (SSD) approach will protect threatened and endangered fish. If we are	Chapter 09, Page 9-16 and 9-21  Section 9.8.1.1 and 9.8.1.6	Text revised to better differentiate recommendations from final approaches.  Additional discussion has been provided on how the proposed approach would protect ESA species if they fall within the lower 5%, and methods for ensuring that the species included are representative of T&E species.

Commenter	Date	Comment	Section	Resolution
		<p>protecting only 95% of the fish populations present, 5% will see effects. These numbers wouldn't protect T&amp;E fish if they fall within the 5% of the most sensitive species. In order to use these numbers, RSET would have to demonstrate with certainty that endangered species sensitivity falls within the 95% of protected species for growth, mortality and reproduction (and behavior, if appropriate).</p>		
NMFS	12/5/05	<p>It is good that behavioral endpoints will be used for generating BTs. The SEF should also include endpoints associated with disease resistance, other diseases where it may be difficult to document mortality in the field but conditions would be likely to contribute to mortality. The strategy of using a number of species to generate BTs, and setting up the guidelines to protect 95% of these species (<i>i.e.</i>, the EPA strategy) may not be adequate if ESA-listed species are a concern. Representatives of ESA-listed species would have to be included in BT generation, and RSET would have to make sure that they were among the 95% of species protected. Separate BTs may be required for specific species in some cases; sensitive life stages also need to be considered. For salmonids, it may be possible to deal with this issue with rainbow trout data, but it would need to be reviewed carefully.</p> <p>Paragraph 2. If this approach is taken, RSET needs to be sure that salmonids are well represented.</p>	Chapter 09, page 9-16; paragraph 2	<p>Additional discussion has been provided on how the proposed approach would protect ESA species if they fall within the lower 5%.</p> <p>Text has been added indicating the need for this review as the values are developed.</p>
NMFS	12/5/05	<p>Species sensitive distributions (SSD) are empirical cumulative distribution functions (CDF).</p> <p>What is the third primary source? Bridges and Lutz (1999) is the citation for the first source. "The Bioaccumulation Subcommittee recommends consistency with EPA's AWQC derivation methodology, using the 5th percentile of an SSD derived from the adverse effects data for survival, reproduction, growth, and behavior as the selected BT ..."</p> <p>Choosing the 5th percentile does not guarantee that adverse effects will not be met. In reality it means that the species of interest has a 5% chance being in the grouping that is adversely affected and 95% chance of not being that adversely affected grouping. Whether or not RSET chooses to use this probability approach with ESA-listed species</p>	Chapter 09, page 9-17, paragraph 2, paragraph 3, last paragraph	<p>Comment noted.</p> <p>References revised.</p> <p>Additional discussion has been provided on how the proposed approach would protect ESA species if they were not within the 5%.</p>

Commenter	Date	Comment	Section	Resolution
		should be thoughtfully considered as there will probably be a lack of relevant salmonid data. NMFS understands that the 95% percentile approach is more appropriate for CWA regulatory considerations, that ESA. The RDT policy group should discuss this issue.		
ERDC	12/5/05	Page 9-18: Be careful when defining the acceptable BT value. Using the current approaches proposed, the triggers may be very low making them define all sediments in the region as requiring bioaccumulation testing (even the references). Maybe a component of the development should include ground truthing the values.	Chapter 09, Page 9-18	Text has been added discussing a ground-truthing step that will need to be performed before any of these values are adopted.
ERDC	12/5/05	Page 9-18; paragraph 2. I disagree with the statement that lots of data is required to derive an SSD based BT. When there is limited data, it requires assumptions be made about the data set (i.e., normal distribution). However, these same assumptions are made when using point estimates, only the assumptions are not transparent and are ignored.	Chapter 09, Page 9-18	The text actually states that the more data that are available, the closer the SSD will be to the true distribution. This statement is accurate.
USFWS	12/21/05	Using species sensitivity distributions (SSDs) and ambient water quality criteria (AWQC) could be appropriate for developing bioaccumulation triggers, but we do not yet know if the method is protective of all listed species. In addition, not all members of the bioaccumulation subcommittee have agreed to developing bioaccumulation triggers based on this approach. An adequate protection level depends on what endpoints are used in the SSD, and behavioral and sublethal inputs should be included during assessments designed to protect threatened and endangered species. Also the AWQC approach does not consider dietary pathway for bioaccumulative contaminants, and this pathway would be important to consider when evaluating bioaccumulation triggers. The dietary pathway can be much more important than other pathways for some receptors.	Chapter 09, Page 9-18, 1 <sup>st</sup> paragraph	Additional discussion has been provided on how the proposed approach would protect ESA species.  Behavioral studies will be included if they are adequately QA'd.  The SSD approach is the preferred approach for many reasons, therefore, the AWQC approach would only be used if it is impossible to calculate a TTL using the SSD approach, and only on a provisional basis.
USFWS	12/21/05	It appears this generalization (i.e. freshwater and marine toxicity is not different for bioaccumulatives) is only based on some chemicals (i.e. just the chemicals that currently have AWQCs) and a limited number of organism. It is appropriate to make the same generalization about the many compounds that do have AWQCs?	Chapter 09, Page 9-18, 2 <sup>nd</sup> to last paragraph	There are a very large number of compounds that have AWQC, so the generalization is based on a lot of data. In addition, there is no theoretical reason why freshwater and marine toxicity would be different for most compounds (other than metals).
NMFS	12/5/05	To address this uncertainty, the bioconcentration factors (or bioaccumulation attenuation factors) should be determined with the lower 95th CI of the 5th percentile of a CDF. The lower 95th CI of the 5th percentile should be used for any	Chapter 09, page 9-18, bottom	Details of the statistics to be used will be discussed by the Bioaccumulation Subcommittee once the distributions have been developed and the alternatives can be evaluated, in conjunction

Commenter	Date	Comment	Section	Resolution
		CDF or SSD in this application.		with a statistician.
NMFS	12/5/05	RSET needs to be careful about the strategy of having BTs consistent with back calculating from a WQC. Not all AWQC are protective of ESA-listed species.	Chapter 09, page 9-18.1	The bioaccumulation subcommittee agrees that back-calculation from AWQC is not the preferred method. If this is done it will only be an interim approach until the more rigorous SSD approach can be used.
ERDC	12/5/05	Page 9-19. Paragraph after table 9-1 is out of place? ("The following sentinel wildlife species..."). Looks like it was originally part of the table title, or was left behind during editing. Need to remove or put in proper location.	Chapter 09, Page 9-19	Revised in a previous version of the document.
NMFS	12/5/05	In some cases if the coefficient of variation is relatively low (e.g., less than 50%) the mean and standard error are sufficient for determining the critical body residue. In many cases the mean CBR can be determined with less data than is needed for an SSD. Molar residues/narcosis model, paragraph 3. A good point is brought up here, that chemicals that are narcotic during short-term exposure may have other modes of action with chronic exposure, so values based on narcosis may not cover these impacts.	Chapter 09, page 9-19, section 9.8.1.4	Agreed – as the text notes, a large data distribution is not necessarily needed, since the narcosis mode of action is independent of species.  This is true – any known alternative modes of action would be addressed through a SSD.
ERDC	12/5/05	Page 9.2 second to last paragraph. "Regardless of how the bioaccumulation data is collected, ...of three exposed populations- fish, fish-eating wildlife AND BIRDS,..."  Birds are "wildlife", too... can drop "birds" unless this is a contentious issue.	Chapter 09, Page 9-2	Revised in a previous version of the document.
ODEQ	11/30/05	Section 9.2, Bioaccumulation Contaminants of Concern: As with the discussion of contaminants of concern for direct toxicity in Chapter 7, the option to analyze for site-specific contaminants (e.g., not just regionally identified BCoCs) should be discussed. Smaller areas may be appropriate for the purposes of establishing site-specific CoC lists. Localized risk from the locality of the facility must also be assessed in state cleanup sites. Of course, if available, relevant data for a more localized evaluation would be used.	Chapter 09, Page 9-2	The text has been revised to clarify the differences between dredging projects and cleanup projects in both the BCOC lists used and the size area that might be addressed.
USFWS	12/21/05	Delete "sequester and metabolize" and replace with "regulate"	Chapter 09, Page 9-2, 2 <sup>nd</sup> to last sentence	Change made as suggested.
EPA	11/14/05	<b>Page 9-21, Section 9.8.1.5 (Chemicals for Which Tissue Quality Guidelines Can be Derived), last paragraph in this section:</b> The sentiment expressed in this paragraph seems to contradict the statement made later (on page 9-30) regarding development of group-level BTs for cPAHs. I	Chapter 09, Page 9-21	This section has been revised to make clear the difference between the treatment of PAHs in the two sections. This section is for TRVs, and the later section is for human health-based TTLs.

Commenter	Date	Comment	Section	Resolution
		suggest that you add text here to clarify the difference and foreshadow what is being suggested in section 9.8.3.4.		
ERDC	12/5/05	Page 9-21. ERED 2003 citation should use the ERED web-page which is constantly updated. <a href="http://el.erd.c.usace.army.mil/ered">http://el.erd.c.usace.army.mil/ered</a>	Chapter 09, Page 9-21	Revised in a previous version of the document.
NMFS	12/5/05	It is important to be sure that all relevant endpoints for these species are covered, not only growth, reproduction, and survival. The SEF also needs to consider all life stages for these species. The approach definitely needs to include tissue residue data from trout or other salmonids in determinations. RSET should not assume it will be acceptable without that.	Chapter 09, page 9-21	The text has been revised to make it clear which endpoints are being addressed, and that salmonids need to be included among the data used to develop TRVs.
ODEQ	11/30/05	9.8.1.5 Chemicals for Which Tissue Quality Guidelines Can be Derived The last paragraph says that "Existing data do not currently permit development of generally applicable tissue guidelines for either individual PAH compounds or mixtures of PAHs. The Bioaccumulation Subcommittee recommends that RSET not attempt to develop tissue BTs for either individual PAH compounds or PAH mixtures at this time." This statement is not consistent with the statement in Section 9.8.3.4 Bioaccumulation Triggers for Compounds with Common Toxic Mechanisms (page 9-32, 2nd paragraph) "The toxicity of multiple cPAHs may be evaluated using the relative potency approach. This approach involves comparison of the cancer causing ability of a particular cPAH to a reference compound, benzo[a]pyrene (BaP), by means of a relative potency factor (RPF). A cPAH with an RPF of 1.0 would be as effective as BaP in inducing cancer. A cPAH with an RPF of 0.5 would be half as effective as BaP in inducing cancer, and so on. Multiplying the concentration of a cPAH by its RPF produces the concentration of BaP having equivalent cancer inducing ability (BaP Eq) to the cPAH concentration in question. By computing the BaP Eq for every cPAH in a tissue sample and then summing all BaP Eqs, the concentrations of all cPAHs in the tissue sample may be expressed in terms of a total BaP Eq concentration." The differences between these two sections should be addressed.	Chapter 09, Page 9-21 Section 9.8.1.5	This section has been revised to make clear the difference between the treatment of PAHs in the two sections. This section is for TRVs, and the later section is for human health-based TTLs.
NMFS	12/5/05	The statement that tissue residue guidelines for PAHs for fish and wildlife cannot be developed is true. But it's unclear just how to proceed. It says in the document that PAHs should be evaluated by comparing concentrations in water	Chapter 09, page 9-21, paragraph 1-2	RSET generally agrees with the comment. However, with the approaches currently available there is no way to build this into the framework other than the existing SQGs. As alternative

Commenter	Date	Comment	Section	Resolution
		or sediment to existing environmental guidelines, standards or criteria. Which specific criteria should be considered? Some of them, including current SQGs for bioassays, are not protective of fish effects.		approaches become available, such as those being developed by NOAA, they can be added as SLs.
USFWS	12/21/05	Because there are so many chemical-receptor interactions, it may be inappropriate to state that most water quality standards are protective of threatened and endangered species. This point is still under review, which is why there are ongoing ESA consultations on water quality standards. Also there are no water quality criteria available for many chemicals to which listed species are exposed.	Chapter 09, Page 9-21, section 9.8.1.6, 1 <sup>st</sup> paragraph, last sentence	The bioaccumulation subcommittee agrees that back-calculation from AWQC is not the preferred method. If this is done it will only be an interim approach until the more rigorous SSD approach can be used.  While many chemicals are present in the environment, only a relative few bioaccumulate in regional tissues and have known toxicity. Regardless of whether or not they have AWQC, any chemical present can be sorted into one of the BCOC lists and addressed as appropriate.
NMFS	12/5/05	Dietary TRVs are discussed here for wildlife, but this approach may also be applicable to fish for contaminants that are less bioaccumulative, and not included in list 1, such as PAHs. Note that all relevant endpoints should be considered, including behavior, disease resistance – not only growth, reproduction, and survival.	Chapter 09, page 9-24, paragraph 1	Certain PAHs are included in List 1, if they have been detected in fish or invertebrate tissues and have known toxicity.
EPA	11/14/05	<b>Page 9-27, Section 9.8.3 (Tissue Bioaccumulation Triggers for Human Health), first paragraph at the top of the page:</b> Please clarify what interim toxicity values would be obtained from EPA Region 10 and who in Region 10 would be contacted. I made this comment on an earlier draft and the text was not changed. I know of no toxicity values that have been developed by this Region and am confused by this reference.	Chapter 09, Page 9-27	This statement has been deleted. Updated toxicity values are being gathered from a variety of sources and will be referenced in the next version.
ERDC	12/5/05	Page 9-27: the assumptions in the HH model need to be discussed.	Chapter 09, Page 9-27	It is not entirely clear what is meant by this comment. The major assumptions have been described that pertain to the equations themselves. Input values for the equations are being developed this year based on a several exposure scenarios. These will be provided for public review in the next version of the document.
ODEQ	11/30/05	9.8.3.3 Exposure Assumptions: The first paragraph states: "As described above, the tissue BTs will be derived to be protective of all populations and endpoints." What is meant by "all populations?"	Chapter 09, Page 9-29 Section 9.8.3.3	The text has been clarified.

Commenter	Date	Comment	Section	Resolution
		The third paragraph states: "It is proposed that the generic tissue BTs be initially developed based on a default fractional intake of 100 percent followed by potential evaluation of alternate fractional intakes based on the aforementioned factors." This approach may not be consistent with Water Quality Program policy and the Clean Water Act that protects water quality for potential future beneficial uses.		It is not clear how use of a fractional intake of 100% would be inconsistent with program guidelines that require protection of future beneficial uses, as this is the most conservative value that could be selected.
ERDC	12/5/05	Page 9-3, section 9.3. First two paragraphs are quite redundant.	Chapter 09, Page 9-3	Revised in a previous version of the document.
USFWS	12/21/05	This section states that "smaller areas are not appropriate for the purposes of establishing BCoc lists, as fish and affected wildlife may range widely throughout these areas and be affected by more than one source of contaminants." This sentence should be deleted. There are a number of small-ranging species that could be used for sediment assessment and this should be encouraged at small sites. For example, oligochaetes, clams, sculpin, crayfish and smallmouth bass are very localized aquatic species, and sandpipers could be very localized during the breeding season when impacts from contaminants could potentially be greatest.	Chapter 09, Page 9-3, last paragraph	This text has been revised to more clearly differentiate between cleanup sites, which may be considering more localized impacts, and dredging projects, which fall within the regional framework.
NMFS	12/5/05	PAHs also need to be considered with dioxins, furans, and PCBs. See, Barron <i>et al.</i> (2004) for TEFs based on TCDD potency.	Chapter 09, page 9-30, section 9.8.3.4	This issue will be discussed further within the Bioaccumulation Subcommittee when the TTLs are calculated.
ODEQ	11/30/05	Table 9-2; TEFs are available for mammalian, avian, and fish depending on the receptor of interest. These TEFs are in the same article referenced here and should be included in the table and used when evaluating risk.	Chapter 09, Page 9-31, Table 9-2	Currently, the consensus of the bioaccumulation committee is that these values are not finalized to the point where they are ready for use.
ODEQ	11/30/05	9.8.3.4 Bioaccumulation Triggers for Compounds with Common Toxic Mechanisms; page 9-32; 2nd paragraph: "The toxicity of multiple cPAHs may be evaluated using the relative potency approach. This approach involves comparison of the cancer causing ability of a particular cPAH to a reference compound, benzo[a]pyrene (BaP), by means of a relative potency factor (RPF)." This is not consistent with the discussion in Section 9.8.1.5 page 9-21; 2nd paragraph, regarding the metabolism of PAHs to more toxic reactive intermediates and a lack of data for developing generally applicable tissue guidelines. From Page 9-21, "Existing data do not currently permit development of generally applicable tissue guidelines for	Chapter 09, Page 9-32 Section 9.8.3.4	This section has been revised to make clear the difference between the treatment of PAHs in the two sections. This section is for TRVs, and the later section is for human health-based TTLs.

Commenter	Date	Comment	Section	Resolution
		either individual PAH compounds or mixtures of PAHs. The Bioaccumulation Subcommittee recommends that RSET not attempt to develop tissue BTs for either individual PAH compounds or PAH mixtures at this time.” The language in these two sections needs to be consistent.		
NMFS	12/5/05	This approach is appropriate for effects related to cancer and mutagenicity that are mediated through BaP-like compounds, but it may not work as well for other endpoints.	Chapter 09, page 9-32, paragraph 2	Comment noted.
EPA	11/14/05	<p><b>Page 9-4, Section 9.3 (Reason to believe), 3<sup>rd</sup> and 4<sup>th</sup> paragraphs on page:</b> Revise text in first two sentences of the third paragraph as follows to clarify that a project proponent may compile existing data in addition to generating new data:</p> <p>“If no tissue data exist or existing data have not yet been compiled for an area, reason to believe would be based on concentrations of all List 1 BCoCs in sediments (see Appendix A). Alternatively, the project proponent may gather and present existing and/or new tissue data to demonstrate...”</p> <p>Replace text in the fourth paragraph with the following to reduce redundancy with earlier text and to clarify the use of reference areas:</p> <p>“The second step is to review the sediment chemistry data for the BCoCs in tissues in the waterway, and compare them to sediment BTs. If sediment BTs are not available, comparison to sediment concentrations in reference areas could be used to determine if BCoCs are elevated in the sediments in questions. Thus, chemicals present in sediment and in regional tissues at elevated levels would establish a sufficient reason to believe.”</p>	Chapter 09, Page 9-4	Change made as suggested.
ERDC	12/5/05	Page 9-4, section 9-3-1. Species names should be italicized	Chapter 09, Page 9-4	Change made as suggested.
NMFS	12/5/05	It appears that only chemicals on list 1 will be used to determine if these is a need for bioaccumulation testing. What about chemicals on lists 2 and 3? Some of these may accumulate in benthic organisms or the fish/wildlife prey base but are metabolized by fish and mammals. Also, if BTs and regional reference tissue concentrations are not	Chapter 09, page 9-4	Only the chemicals on List 1 meet a “reason to believe” definition of being present in regional tissues, bioaccumulative, and toxic to either wildlife or humans. Chemicals on other lists can be moved to List 1 if either distribution or toxicity data becomes available to demonstrate that they

Commenter	Date	Comment	Section	Resolution
		available, and testing is based on whether list 1 contaminants are present, how high do levels have to be before tests are required? Provide a clearer definition of significantly higher than background.”		are of concern.  These definitions will be clarified for the next version of the document.
ODEQ	11/30/05	<p>Section 9.3, Reason to Believe:</p> <p>In the 1st paragraph the statement “Areas such as these may require additional lines of evidence to evaluate management options” is unclear. Please provide additional information.</p> <p>The term “regional” should be defined here. Does this mean a localized watershed, such as a slough or lower river, the state of Oregon or the Pacific Northwest? Depending on the scale, this approach may focus the assessment prematurely on chemicals that reach a region-wide risk trigger. The goal should be to prevent problems regionally by addressing localized sources and areas of risk. Again, reason to believe should include site-specific bioaccumulation testing, if warranted. Site-specific bioaccumulation testing may provide the most relevant information on availability. This would include multiple lines of evidence to assess potential bioaccumulation at an individual site. The option to present information indicating the chemical is not present at levels of concern in tissues should consist of relevant, site-related information (e.g., it is likely the fish have been in contact with the site).</p>	Chapter 09, Page 9-4, section 9-3	<p>This text has been removed.</p> <p>Text has been added clarifying the term “regional”; however, it will be easier to develop a list of regions rather than to define them narratively for all three states.</p> <p>“Reason to believe” falls before Tier 1 testing, and as such it is not anticipated that any site-specific information will necessarily be available. It is not considered reasonable to require for every project or site in Tier 1.</p>

Commenter	Date	Comment	Section	Resolution
EPA	11/14/05	<p><b>Page 9-5, Figure 9-1:</b> Add text to this figure to clarify that comparison to reference areas is an option to determine if tissue or sediment concentrations are elevated. For example,</p> <ol style="list-style-type: none"> <li>1. Change the 2<sup>nd</sup> hexagon in figure to read, "Tissue BTs or reference area values available?".</li> <li>2. Change to 2<sup>nd</sup> rectangle on the left to read, "Refine BCoC list to chemicals above BTs or reference area values".</li> <li>3. Change first hexagon on right side to read, "BCoCs elevated over sediment reference values".</li> </ol> <p>Clarify what is meant by the "small project exemption" in footnote #2. Is this what is described on page 9-6 (2<sup>nd</sup> full paragraph on page) as a no-test volume and &lt;10KCY comparison to disposal site sediment? If so, these should be identified in the text as the small project exemptions.</p>	Chapter 09, Page 9-5	<p>The figure has been revised as suggested.</p> <p>The small project exemption has been better referenced.</p>
USFWS	12/21/05	<p>The term elevated is not well defined here. If "elevated" is based on a comparison to reference values, then which reference values are used? If reference values are not available, what will be used for comparison until reference numbers are obtained?</p> <p>Also, there is no reason (contrary to what the footnote says) that this analysis should not be conducted on small dredge volumes. The only difference between small and large dredge volumes is the mass of contaminant that could be resuspended; the contaminant in both situations would be just as available to receptors.</p>	Chapter 09, Page 9-5, figure 9-1, textbox that states "BCoCs also elevated in sediments"	<p>An attempt has been made to clarify "elevation above reference." However, the Bioaccumulation Subcommittee consensus was that the exact statistical procedures for the comparison would need to be based on the distribution of the data, and will be determined once the data are compiled.</p> <p>Small project exemptions are retained in the SEF. The primary difference is that these small volumes of sediment would be expected to be quickly covered or capped at the disposal site, and therefore even if levels are somewhat elevated they would not contribute to exposure for long. This is an appropriate balance for the significant burden that bioaccumulation testing would place on smaller projects.</p> <p>Monitoring at the existing disposal sites has not uncovered any levels of contaminants or effects that suggest that the small project exemptions are causing toxic effects or bioaccumulative impacts. Clarifying text has been added to indicate that these exemptions only apply to dredging projects and not to cleanup sites.</p>

Commenter	Date	Comment	Section	Resolution
ERDC	12/5/05	Page 9-6. Section 9.4 is "reserved"... needs to either be addressed or section eliminated.	Chapter 09, Page 9-6	Reserved sections remain in the document for completeness and to inform the community of what RSET is still working on developing. There is no apparent reason to delete them.
ODEQ	11/30/05	<p>The 2nd paragraph states: "For example, smaller projects may be allowed to compare their sediment concentrations to those already at the disposal site. As disposal site monitoring has not shown bioaccumulation occurring in the past, this approach should be protective for small projects in the interim until tissue BTs and/or sediment BTs can be established." There needs to be a reference for such a blanket statement.</p> <p>In the same paragraph it should be stated that the "no test" option does not apply to in-place sediment evaluations (cleanup). Small areas can be important sources of localized effects, especially if they have significantly elevated concentrations of contaminants.</p> <p>For developing sediment screening values (3rd paragraph), triggers for bioaccumulation testing could also be based on a compiled dataset of existing bioaccumulation testing results, if available, in the area of concern. This is a line of evidence that would start from the "bottom up" and may help make more use of the top down "reason to believe" approach.</p>	Chapter 09, Page 9-6	<p>References have been added to the results of past monitoring events at disposal sites.</p> <p>The requested text has been added.</p> <p>This option has been added to the text.</p>
USFWS	12/21/05	As stated earlier, there is no reason to believe that contaminants in small dredge volumes are any less available than in larger dredge volumes (there would only be less mass of contaminants in larger volumes). Therefore, small volumes also must be assessed and should not be ruled out solely to reduce the regulatory burden required of an applicant. Language in this paragraph regarding no-test volumes should be deleted.	Chapter 09, Page 9-6, 3 <sup>rd</sup> paragraph	<p>Small project exemptions are retained in the SEF. The primary difference is that these small volumes of sediment would be expected to be quickly covered or capped at the disposal site, and therefore even if levels are somewhat elevated they would not contribute to exposure for long. This is an appropriate balance for the significant burden that bioaccumulation testing would place on smaller projects.</p> <p>Monitoring at the existing disposal sites has not uncovered any levels of contaminants or effects that suggest that the small project exemptions are causing toxic effects or bioaccumulative impacts. Clarifying text has been added to indicate that these exemptions only apply to dredging projects</p>

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				and not to cleanup sites.
NMFS	12/5/05	To develop a site-specific biota/sediment accumulation factor (BSAF), a large amount of data would be required. This would be in the order of 20 species, over multiple types of sediment and time periods. Also, either steady state would have to be assured, or if a particular BSAF is less than steady state the rate of contaminant elimination must be known. This information would be used to determine the percentage steady state for a given time period and produce a correction factor that would be used to adjust the BSAF to the steady state value. In many cases, defaulting to the equilibrium value for hydrophobic organic compounds (e.g., 1.7 to 4), would be appropriate and conservative.	Chapter 09, page 9-6, bottom of page	New EPA guidance which is still in draft form may challenge some of these assumptions and provide new information on calculation methods for BSAFs. The Bioaccumulation Subcommittee will continue to monitor this guidance as it evolves and will incorporate the best available science into this section once consensus has been reached.
EPA	11/14/05	<p><b>Page 9-7, Section 9.4 (Laboratory Bioaccumulation Testing):</b> This section needs to be expanded to reflect more of the complexity involved in selection of a laboratory bioaccumulation test and interpretation of the results of such testing. For example, the DMMP has made several revisions to the standard 28-day bioaccumulation test that should be mentioned here (see the DMMP home page under "bioaccumulation updates"). For several prominent BCoCs (PCBs, DDT and TBT), the test duration has been extended to 45-days with concomitant revisions to the set-up and sediment renewal process for these tests.</p> <p>Likewise, there has been discussion (for example in DMMP's Bioaccumulation Work Group) about 1) the need to expand the list of bioaccumulation test organisms (e.g., to include species such as <i>Armandia sp.</i>, who appear to be better accumulators of specific BCoCs); 2) the relative importance of sediment, sediment-water interface, and porewater exposures and how consideration of this should influence test species selection; 3) the use of static versus flow-through testing regimes; and 4) whether or not it's feasible to include measures of sub-lethal effects in bioaccumulation testing (e.g., changes in % lipid or weight).</p>	Chapter 09, Page 9-7	<p>Additional text has been added to Section 9.4 referencing the need to extend test duration for some contaminants, and referencing the DMMP paper.</p> <p>These are all issue appropriate for the biological testing committee, which was not funded this year. We anticipate receiving funding for this activity next year. Additionally, these issues can be raised through the annual review meetings, as is done with SMARM. Specific recommendations in these areas would be considered and appreciated.</p>
ODEQ	11/30/05	Section 9.4, Laboratory Bioaccumulation Testing: For freshwater sediments, a filter-feeding organism (e.g., a mollusk) should be added to be used in conjunction with the <i>Lumbriculus</i> . Different organisms may have very different routes of exposure and accumulation. For example, <i>Corbicula</i> could be added here.	Chapter 09, Page 9-7	RSET agrees that a second bioaccumulation testing species is needed, for a variety of reasons. <i>Corbicula</i> , while it has clear advantages and is widely used, needs to be further discussed as there have been some objections raised to the use of this species by the resource agencies.

Commenter	Date	Comment	Section	Resolution
ODEQ	11/30/05	The 1st paragraph says, "The main advantage of this approach is the ability to characterize exposure and effects over space and time and under environmentally realistic test conditions at the specific project or site in question. The main disadvantage is the cost, although costs do not increase incrementally with time as in laboratory toxicity or bioaccumulation tests because daily maintenance is not required." An even greater disadvantage of <i>in situ</i> bioaccumulation testing is that the animals are not exposed to the toxic chemicals in the entire dredge prism if the dredge depth is deeper than the biologically active zone.	Chapter 09, Page 9-7	The text has been revised to reflect the comment.
NMFS	12/5/05	Perhaps RSET can recommend a toxicity/growth assay for <i>Lumbriculus</i> ? This seems ripe for toxicity assessment. Are these test species the most sensitive? Ideally one would want a deposit feeder for these tests. Also, an organism that lives through tests even when high levels of contaminants are present may not be a very good bioaccumulator.	Chapter 09, page 9-7, section 9.4	Lumbriculus is recommended as a candidate bioassay organism (Inland Testing Manual - EPA/Corps); however, Lumbriculus may not be appropriately sensitive enough for use in toxicity bioassays. However, Lumbriculus is an appropriate organism for laboratory bioaccumulation testing (Inland Testing Manual - EPA/Corps).  Frequently, species that are good bioaccumulators are not the best test species for toxicity, as they need to be able to continue accumulating toxins even at higher concentrations that might harm or kill more sensitive species.
WDOE	11/30/05	The duration of standard bioaccumulation tests may need to exceed 28 days (see SMARM paper, DY 2000).	Chapter 09, page 9-7, section 9.4	Additional text has been added to Section 9.4 referencing the need to extend test duration for some contaminants, and referencing the DMMP paper.
NMFS	12/5/05	Many metals (e.g., list 4 in Appendix A) are not expected to bioaccumulate. Please note that according to Rainbow and Dallinger (1993), regulation of metals at the whole-body level is not common in invertebrates and is somewhat restricted to essential elements (e.g., copper and zinc). These authors also note that some species that are considered net accumulators will exhibit regulation at the tissue level, which may affect the concentration at the site of action and the assumption that whole-body residues are a surrogate for concentrations at the site of action. The RSET should discuss how to incorporate the details of the Rainbow and Dallinger (1993) work into the SEF	Chapter 09, page 9-8	How to address the bioaccumulation of metals has been an ongoing topic of discussion in the Bioaccumulation Subcommittee. Circulation and discussion of this paper would be welcomed as a step in that process.
NMFS	12/5/05	The test organism requirement that it should bioaccumulate	Chapter 09,	If more sensitive species are selected for

Commenter	Date	Comment	Section	Resolution
		without exhibiting mortality may limit animals to those that are not really very likely to bioaccumulate.	page 9-8	bioaccumulation testing than mortality will likely increase confounding the objective of bioaccumulation tests (i.e., tissue for chemical analysis).  The selection of a test species for bioaccumulation testing will be from the accepted list of test species; therefore, it is assumed that any species selected will bioaccumulate BCoCs without causing increased mortality, unless sediment concentrations are extremely elevated.
EPA	11/14/05	<b>Page 9-9, Section 9.5.2 (Freshwater In Situ Tests – Bivalves), second full paragraph:</b> Please clarify that <i>Lumbriculus variegates</i> is an oligochaete (not a bivalve).	Chapter 09, Page 9-9	The indicated text has been removed to streamline this section and make it more consistent with the other testing approaches. The full text can still be found in White Paper #20 for future reference.
ERDC	12/5/05	Page 9-9. ERED database mentioned; should provide we blink to site. Note that it is again latter mentioned (page 9-14), and references an old tech note... actual link to site would be better.	Chapter 09, Page 9-9	Revised in a previous version of the document.
NMFS	12/5/05	Mussels, oysters and clams for in situ testing are useful as line of evidence for bioaccumulation, but may not be so relevant to fish.  More discussion may be needed about the pros and cons of <i>Corbicula</i> ; filter feeder vs. deposit feeder questions.	Chapter 09, page 9-9	Certainly, bivalve exposure may be very different from exposure to fishes. In situ testing with fish is possible, but is substantially more difficult than with bivalves or other invertebrates. It is expected that use of a filter or deposit feeder would represent a worst-case exposure scenario compared to fish or other higher trophic levels.  A detailed discussion of filter feeding vs. deposit feeding behavior of <i>Corbicula</i> and <i>Lumbriculus</i> is provided in White Paper #20.
ODEQ	11/30/05	Section 9.5.2, Freshwater In Situ Tests: The <i>in situ Lumbriculus</i> test should be included. <i>Lumbriculus</i> would be feeding in and directly exposed to the sediment. Crayfish may be variable in their accumulation from sediment since they are an epibenthic detritivor and scavenger.	Chapter 09, Page 9-9, section 9.5.2	<i>Lumbriculus</i> has been added as a potential in situ testing species, though protocols for it may not yet be available. Further discussion is needed to refine the list of potential freshwater species; however it may be a lower priority than refining the list of laboratory bioaccumulation test species.

Commenter	Date	Comment	Section	Resolution
		Accumulation in crayfish tissue may not relate well to contamination in sediment.		Regarding crayfish as a candidate in situ species, the SEF recommends Corbicula as the ideal species and to use crayfish as a substitute if the study area is not abundant with Corbicula (or is populated with crayfish).  Crayfish are in part included because there are recreational fisheries for them in some areas of the Pacific NW, and therefore represent a possible exposure pathway.
ERDC	12/5/05	Section 9, General <ul style="list-style-type: none"> <li>In situ bioaccumulation testing is given a significant amount of attention in this guidance. However, it is rarely employed in sediment evaluations.</li> <li>No mention of using thermodynamic modeling to predict bioaccumulation (TBP). This is a valuable tool to use site specific chemistry and physical analysis data and determine that a polar organic is or is not an issue.</li> <li>References in this section need to be expanded. Use of peer-reviewed literature is preferred over consultant reports.</li> </ul>	Chapter 09, Section 9	The in situ testing section has been streamlined to be more consistent with the other sections.  Thermodynamic modeling is not currently in routine use in the RSET program. It may be discussed in the future, particularly when calculating BSAFs and sediment BTs.  As noted, the section has been greatly streamlined. References are consistent with other sections of the SEF.
ERDC	12/5/05	Section 9.1, first paragraph, last sentence, BT used for first time. Although acronym page available at beginning of document, it should be defined here.	Chapter 09, Section 9.1	Revised in a previous version of the document.
ERDC	12/5/05	Section 9.3.2. A table of species (at least to genus level) and associated citations would be greatly helpful here.	Chapter 09, Section 9.3.2	This section has been substantially streamlined to be consistent with other sections, and the indicated subsection no longer exists.
ERDC	12/5/05	Pages 9-5 and 9-6, section 9.3.2. Last paragraph page 9-5, RE "fingernail clams". At least list representative genus of these species, PROVIDE REFERENCES. Ditto for gastropods mentioned on page 9-6.	Chapter 09, Section 9.3.2	This section has been substantially streamlined to be consistent with other sections, and the indicated subsection no longer exists.
ERDC	12/5/05	Section 9.6, page 9-11. Introduction section should start with a short discussion of tissue vs. sediment BT derivations (currently vaguely mentioned at end of second/final paragraph of overview). Page 9-14 mentions database contains 4000 records- I think this number has grown, I will	Chapter 09, Section 9.6	This is an introductory section; more complete discussions of tissue and sediment BT derivations follow. Database citation revised in an earlier version.

Commenter	Date	Comment	Section	Resolution
		check with Charlie for an up-to-date number.		
ERDC	12/5/05	Section 9.6.1. Section title, "Tissue BTs for fish" would be more accurately reflect contents if changed to "Tissue BTs for fish and benthic invertebrates".	Chapter 09, Section 9.6.1	Revised in a previous version.
ERDC	12/5/05	Section 9.6.1.4. Section heading, "Chemicals for which tissue quality guidelines CAN BE DERIVED" would be more accurately reflect contents if changed to "Chemicals for which tissue quality guidelines CAN NOT (or should not) BE DERIVED"	Chapter 09, Section 9.6.1.4	Change made as suggested.
ERDC	12/5/05	Section 9.6.4. Sediment BT's listed as "reserved". Either address or remove section. (if latter, probably a blanket statement in earlier section on sediments (9.5.4) mentioning that lack of information prevents development of sediment BTs at this time).	Chapter 09, Section 9.6.4	Reserved sections remain in the document for completeness and to inform the community of what RSET is still working on developing. There is no apparent reason to delete them.
ERDC	12/5/05	Section 9.8: General: The discussion of the development of the triggers is good. However, it may be best left in a white paper given the approach that will be used is likely to be different.	Chapter 09, Section 9.8	RSET expects to use the approaches listed and is placing them in the SEF for public comment.
ODEQ	11/30/05	Section 9.8.1, Tissue Bioaccumulation Triggers: It would be helpful to identify what chemicals could be evaluated with the tissue residue approach (e.g., organics). For those chemicals for which you can't use tissue residues to assess effects (e.g., PAHs) it would be good to describe other lines of evidence that could be used for the evaluation (e.g., water toxicity (metals) and estimates of tissue residues using acceptable water quality criteria, and water / dietary dose (PAHs)).  The last paragraph states: "In many cases, the BT value developed for fish will also be applicable to aquatic invertebrates. For many contaminants, the CBRs will be the same for fish and invertebrates,..." Please provide a reference for this statement and additional clarification as to why the BT values would be the same for fish and aquatic invertebrates.	Chapter 09, Section 9.8.1, Page 9-15	The chemicals that cannot be addressed using the tissue residue approach are listed in Section 9.8.1.5. In general, these are chemicals that do not bioaccumulate, and therefore are better addressed through SQGs.  There is no specific reference for this information; it is based on a review of the ERED database and other sources of TRV data. For most chemicals evaluated to date, the distributions for fish and invertebrates overlap. The reasons for this is that the mechanisms of toxicity are similar for most chemicals that bioaccumulate. In cases where there are differences (e.g., imposex effects of TBT) this will be evaluated during development of the TRV and discussed on a case-by-case basis.
ERDC	12/5/05	Section 9.8.1.3, paragraph 1; The "simpler" approaches use less data and subsequently have implied assumptions that are not transparent.	Chapter 09, Section 9.8.1.3	Comment noted. These are not preferred, but are included as a fallback if there are not enough data to use the more complex approaches.

Commenter	Date	Comment	Section	Resolution
ERDC	12/5/05	Section 9.8.1.3, paragraph 2; Having not read the Sheppard study, it concerns me that the screening values consistently (95% of the time) overestimated the WQC. Secondly, the WQC are inherently protective making these WQC based trigger very likely to consistently overestimate bioaccumulation potential.	Chapter 09, Section 9.8.1.3	Agreed. As noted, the bioaccumulation subcommittee prefers the SSD approach and will use it if at all possible. The WQC approach is a backup to be used for interim guidelines only, if we cannot go directly to the SSD values.
ERDC	12/5/05	Section 9.8.3; This section is straightforward but does not include a discussion about how the data will be compared to sediment and used as a trigger. A detailed discussion about the assumptions used in the food web model are needed.	Chapter 09, Section 9.8.3	The Sediment BT section is reserved until tissue TTLs are developed. The inputs to be used in the wildlife equations are being developed this year.
ERDC	12/5/05	Page 9-17. Section 9.6.2. title listed as Tissue BTs for piscivorous wildlife; first sentence following talks about tissue trigger levels. Be consistent with terminology.	Chapter 09, Section 9-17	Revised in a previous version of the document.
ERDC	12/5/05	Section 9-8: test organism list should include tolerance to non-confounding factors (e.g., ammonia, grain size).	Chapter 09, Section 9-8	This information can be found in the test protocols.
ERDC	12/5/05	Sections 9.2.1 and 9.2.2 are not provided. At least refer the readers to existing EPA/Corps/ASTM type manuals.	Chapter 09, Sections 9.2.1 and 9.2.2	Revised in a previous version of the document.
Port of Portland	11/10/05	<p>Section 10 generally contains basic technical descriptions of generic categories of disposal options. This section would have greater value if it outlined and defined the applicable regulatory framework, involved agencies, relevant guidance and/or recommended policies, etc. associated with each of the disposal options. The Port believes that beneficial use of sediments should have a more prominent place in this document. It would be good to mention or include that option before listing off actual "disposal" options.</p> <p>The SEF should consider all upland management options for sediments. Along with landfill disposal appropriate for some contaminated sediments, there are many realistic, acceptable and appropriate management options (topsoil, fill, soil amendment, surcharge, etc.) for use of slightly or non-contaminated sediments that are not mentioned, presented, or discussed within the document</p>	Chapter 10	
WDOE	11/30/05	<p>A good, brief introduction to sediment management alternatives, with the notable exception of treatment/decontamination which is conspicuously lacking.</p> <p>The text in this chapter does not help much in making decisions between management alternatives <i>based on risk</i>, as indicated earlier.</p>	Chapter 10	

Commenter	Date	Comment	Section	Resolution
ODEQ	11/30/05	<p>Spell out TBC and CSs. In fact, it might be a good idea to get rid of CS altogether and just spell it out. The document would be easier to read if instead of “maintenance dredging and CS dredging” it said “maintenance and cleanup site dredging” or “the dredging of maintenance or cleanup sites.” Or, use the word “remedial” in place of CS.</p> <p>Par. 2, Line 7, change “costliest” to “most costly” so that the modifier will also apply to “time-consuming” and “controversial.”</p>	Chapter 10, 10-1	
ODEQ	11/30/05	Line 3: It would sound much better to say, “The primary long-term transport pathway is loss through the containment media.”	Chapter 10, 10-11	
ODEQ	11/30/05	<p>On line 5 “uncontaminated sediment” is given the acronym CS. As stated above, eliminate altogether.</p> <p>Change “... project managers for these projects...” to “...managers of these projects...”</p>	Chapter 10, 10-2	
ODEQ	11/30/05	<p>The first three sentences in section 10.5.1 are awkward. Rewrite them something like the following: “Capping is beneficial to the environment because chemical contamination and debris are isolated from potentially useful habitats. The temporary loss of biota is acceptable in areas where the benthic community is currently stressed or a pathway exists for transfer of contaminants to higher trophic levels.”</p> <p>10.5.3: “Placement of a thick cap placed over a problem area...” doesn’t need the word “placed.”</p>	Chapter 10, 10-8	
ODEQ	11/30/05	<p>First full paragraph: delete “Evaluation of...”</p> <p>Section 10.7: In the first paragraph, the last sentence ends with “... does not refer to subaqueous capping or CAD.” A CAD is described as “subaquatic” in the previous section so we suggest that you use “subaquatic capping” in place of “subaqueous capping.”</p>	Chapter 10, 10-9	
ODEQ	11/30/05	<p>Par. 2 in 1.6.5 needs to be rewritten in a more understandable fashion. Long unwieldy sentences like the second one should be rewritten wherever they show up.</p> <p>Also, was OMC written out or defined somewhere before this page?</p>	Chapter 10, 1-15	

Commenter	Date	Comment	Section	Resolution
ODEQ	11/30/05	<p>Add the following to the last paragraph in section 10.7:  “Oregon requires a solid waste disposal permit or permit exemption for disposal or placement of dredge sediment at a nearshore site.”</p> <p>Add the following near the Washington State requirements in section 10.8.2: “Oregon requires a solid waste disposal permit or permit exemption for disposal or placement of dredge sediment at an upland site.”</p> <p>It might be helpful to show a CAD in Figure 10-1.</p>	Chapter 10, Page 10-10	
ODEQ	11/30/05	Are there any data to support the statement that natural recovery generally requires ten years or less? If so, please provide references. If not, please remove the statement.	Chapter 10, Page 10-11	
WDOE	11/30/05	The reference to Minimum Functional Standards (WAC 173-304) is obsolete. Reference should be made to WAC 173-350 or more generically to “current State solid waste regulations”. Section 10.9, Other Management Options. The text should mention that models are often used to predict “natural recovery” within a given time frame. Some acknowledgment should also be made to emerging sediment treatment/decontamination technologies.	Chapter 10, page 10-11, section 10.8.2, text above bullets	
WDOE	11/30/05	Please make clear that the term “thin cap”, as used in the SEF, is intended to mean containment/confined disposal and not enhanced natural recovery.	Chapter 10, page 10-2, bullet #2 and page 10-8, section 10.5.2	
ODEQ	11/30/05	Are the “flow lane disposal sites in the Columbia River” that are mentioned here included in any of the three tables? If not, why not?	Chapter 10, Page 10-3	
ODEQ	11/30/05	Section 10.5: Please define the terms “less sediment contamination” and “greater sediment contamination” that are used in the bulleted items.	Chapter 10, Page 10-7, section 10.5	
ODEQ	11/30/05	Provide references for the projects listed in the last sentence of 10.5.2.	Chapter 10, Page 10-8	
Port of Portland	11/10/05	As noted above, Section 10.3 does not mention or discuss any upland management options for uncontaminated sediments, other than solid waste landfills or upland CDFs. Although mentioned in the text, the flow-lane disposal sites in the Columbia River are not listed in the referenced tables.	Chapter 10, Section 10.3	
Port of Portland	11/10/05	Sediments are resources that have value and a long list of potential uses. The Port is pleased a chapter devoted to	Chapter 10, Section 13	

Commenter	Date	Comment	Section	Resolution
		<p>beneficial use of sediments is being considered for the SEF. However, we recommend dropping the term “disposal” in this context, as it is not productive, in terms of management decisions and opportunities for resource use.</p> <p>The main focus of suitability determination should be on suitability of a suite of management options and uses, depending on the specific sediment characteristics. The specific proposed use of the sediment should be one of the main drivers of the characterization requirements. Use in concrete would likely have different requirements than use as topsoil amendment; similarly, structural fill for an industrial parcel would have different requirements than unconfined aquatic disposal. This connection is universal and should be incorporated in the SEF. Characterization requirements should, depending upon the specific case, either verify suitability of a specific proposed use or determine which uses/disposal options are and are not suitable if no specific use has been identified prior to dredging.</p>		
ODEQ	11/30/05	<p>Please rewrite the second sentence; it’s incomprehensible.</p> <p>Par. 2: “...testing evaluations of sediment evaluations...” needs fixing.</p> <p>Fourth bullet needs to be a complete sentence with a structure parallel to the other three.</p>	Chapter 11, 11-1	Change made as suggested.
ODEQ	11/30/05	<p>The “steady state concentrations” should be “state-state concentrations.” Likewise in other cases where that phrase is used as an adjective.</p> <p>11.2.1: The term “(depuration)” serves no purpose in this sentence. Delete it.</p>	Chapter 11, 11-2	Changes made as suggested.
ODEQ	11/30/05	A “four-level” risk assessment that uses a “multi-level approach” is redundant.	Chapter 11, 11-4	Change made as suggested.
ERDC	12/5/05	Page 11-1; bulleted list; I believe this discussion should also include/address mixtures.	Chapter 11, Page 11-1	Change made as suggested.
NMFS	12/5/05	In special evaluations it lists unresolved issue regarding ESA species as situation where special evaluations may be needed. More guidance should be provided here since this is such common situation. Two examples of special evaluations, steady state bioaccumulation, and human	Chapter 11, page 11-1, paragraph 3; page 11-1	The introductory bullets in Section 11.1 have been expanded to provide a more comprehensive list of scenarios for which Special Evaluations may be useful. However, in large part the need for such evaluations will be determined on a case-by-base

Commenter	Date	Comment	Section	Resolution
		health/ecological risk assessment, are discussed briefly, but the document does not give a very good explanation of when these evaluations would be needed, or how to decide if they should be done. This should be corrected.		basis in consultation with RSET and in consideration of the cost-benefit of additional study versus more rigorous engineering controls or alternative disposal options. With regard to ESA species, it is anticipated that Special Evaluations would be most appropriate for projects that could potentially disturb spawning areas or highly functional juvenile rearing areas.
ERDC	12/5/05	pg 11-2, Section 11.2.1, ¶1, line 1: define what kind of differences. Statistical?	Chapter 11, Page 11-2	Text has been clarified to specify statistically significant differences.
ERDC	12/5/05	pg 11-2, Section 11.2.1, ¶3, line 3: it will likely take greater than 28-days for <i>Macoma</i> exposed to DDTs, some PCBs, some dioxins and some furans and for <i>Nereis</i> exposed to DDTs and some dioxins and furans to reach an accurate estimation of steady state (unless organisms are transferred to a control sediment to measure elimination rates directly). For some of these compounds, the 28 day time point may still fall on the linear portion of the uptake curve and this would result in an inaccurate estimation of elimination rates and therefore, the time to steady state and fraction of steady state at 28-days.	Chapter 11, Page 11-2	This issue will be directed to the Biological Testing Subcommittee for further discussion. Any subcommittee recommendations will be considered for incorporation in the next revision of the SEF.
NMFS	12/5/05	The contaminants in the reference sediments will likely be too low to produce measurable tissue concentrations, especially for those species that do not ingest sediment and for sediment with relatively high TOC content. Characterizing the elimination kinetics is an excellent way to determine steady state and should be required for any such determination. Paragraph three in this section describes a very basic procedure for uptake kinetics. The document needs to provide information for determining elimination kinetics. The only reasonable way to determine steady state is with the rate of elimination.	Chapter 11, page 11-2, section 11.2.1	This issue will be directed to the Biological Testing Subcommittee for further discussion. Any subcommittee recommendations will be considered for incorporation in the next revision of the SEF.  The intent of the reference sediment is not to produce measurable tissue concentrations as much as it is to provide a test comparison and interpretation which closely match grain size characteristics of the dredged material test sediments.
ERDC	12/5/05	pg 11-3, ¶1, line 3: add that the field-collected species must be sedentary so that body burdens would be restricted to the area of interest.	Chapter 11, Page 11-3	Changes incorporating recommended suggestions have been made.
WDOE	11/30/05	It is not clear how RSET will aid in interpreting MTCA human health risk assessment guidance.	Chapter 11, page 11-3, section 11.3, paragraph #2	RSET is simply directing the user to reference materials that will be useful in designing and conducting a risk assessment in the state of Washington. It is expected that Ecology staff would be actively involved in any risk assessments conducted under MTCA.

Commenter	Date	Comment	Section	Resolution
WDOE	11/30/05	The correct web URL for the SMS rule is <a href="http://www.ecy.wa.gov/biblio/wac173204.html">http://www.ecy.wa.gov/biblio/wac173204.html</a> The correct web URL for human health risk assessment under MTCA is <a href="http://www.ecy.wa.gov/biblio/9406.html">http://www.ecy.wa.gov/biblio/9406.html</a>	Chapter 11, page 11-4, section 11.3.2	Change made as suggested.
WDOE	11/30/05	The FINAL SEF might benefit throughout from the approach taken here - follow a brief discussion of cleanup site characterization/evaluation with references to existing guidance documents.	Chapter 11, page 11-5, section 11.3.4	Comment noted.
NMFS	12/5/05	Far more data than that described here would be needed to assure that steady state had been achieved in field-collected organisms. A large number of organisms would have to be sampled over time and space to assure that steady state was adequately characterized.	Chapter 11, section 11.2.2.	RSET agrees that spatial and temporal trends in bioaccumulation may violate steady-state assumptions in the field and confound data interpretation. For this reason, RSET generally recommends laboratory tests for evaluating steady-state tissue burdens. Nevertheless, field data constitute an important part of the weight of evidence for bioaccumulation evaluations, as discussed in Chapter 9.
WDOE	11/30/05	Again, Ecology is redeveloping SEDQUAL into a web-based application that will include all its current analytical capabilities. Our RSET representative is also on the SEDQUAL redevelopment design team and will be able to keep the RSET apprised of the status of this project and the long-term future of SEDQUAL	Chapter 12	
ODEQ	11/30/05	Second paragraph: "Both ... districts both use SEDQUAL..." needs fixing.  First bullet: "...listed below in Section 11.2" must be either "...listed above in Section 11.2" or "...listed below in Section 12.2." More likely the latter.	Chapter 12, 12-1	
ODEQ	11/30/05	Figures 12-1 through 12-4 would be easier to use as checklists if borders were applied to the rows and columns.	Chapter 12, 12-4 to 12-7	
WDOE	11/30/05	Current agency guidance is for all sediment quality data to be submitted to Ecology in SEDQUAL format, using SEDQUAL codes, and for the data files to be pre-tested for successful uploading into SEDQUAL. Upon completion of Ecology's ongoing SEDQUAL redevelopment effort, sediment and all other environmental data will be submitted in EIM format.	Chapter 12, page 12-1, bullet #2	
ERDC	12/5/05	page 12-2, Section 12.3: Again, it's surprising that field QA/QC is not even mentioned in the section on quality assurance.	Chapter 12, Page 12-2	

Commenter	Date	Comment	Section	Resolution
WDOE	11/30/05	Note that Ecology now encourages submittal of QA2 data on one or more CD-ROM (instead of paper copies)	Chapter 12, page 12-3, top of page	
WDOE	11/30/05	Delete "Disposal" from title and TOC. The region would benefit from a much greater emphasis on development of this chapter.  Please incorporate appropriate text from the "Beneficial Uses of Dredged Material Manual" DRAFTED by US EPA Region 10 staff (circa 2001), as well as other regional and national guidance.	Chapter 13	Change made as suggested.  Needs to be addressed.
ODEQ	11/30/05	"A beneficial use subcommittee <u>will</u> convene in 2006..."  Paragraph 1: The last sentence is out of place. We agree that coordinating activities is important, but what does that have to do with beneficial use?	Chapter 13, 13-1	Change made as suggested.  2 <sup>nd</sup> Comment needs to be addressed.
ODEQ	11/30/05	Last paragraph: The words Technical, Manuals, Guidance, Documents, and Federal should not be capitalized.	Chapter 13, 13-2	Change made as suggested.
ODEQ	11/30/05	Delete the reference to synergistic effects from the section on pH.	Chapter 14, 14-4	Removed from section: The most significant environmental impact of pH involves synergistic effects. Synergy involves the combination of two or more substances that produce effects greater than their sum.
ODEQ	11/30/05	Rewrite the first sentence of Section 4.5. "In the event a proposed dredging project plans to dispose..."	Chapter 14, 14-7	Sentence changed to: For proposed dredging projects, planning to dispose dredged material at an upland location with several upland pathways of concern will require investigating.
NMFS	12/5/05	NMFS would like to see a discussion on how these water quality parameters will be used to assess the interactive effects on toxicity. For example, even if temperature and pH are within acceptable limits for aquatic life (which are too broad), they will have a substantial effect on toxicity and sensitivity of the organisms. For example, pH can have a drastic effect on the toxicity of metals. The range in pH that is acceptable 6.5 to 8.5 or 9.0 is very broad. Additionally, temperature has a large effect on the uptake and elimination kinetics for many organic compounds, which will have a large affect on toxicity.	Chapter 14, page 14-4, section 14.3	
WDOE	11/30/05	Please insert a brief description of the types of projects where analysis of COCs in the water column during dredging activities may be required (and how often).	Chapter 14, page 14-5, section 14.3	
Port of Portland	11/10/05	The Port appreciates the agencies' attempt to strike the	Chapter 15	

Commenter	Date	Comment	Section	Resolution
		balance between protecting human health and the environment and streamlined management of sediments. The Port believes, however, that the draft SEF will not accomplish the agencies objectives, and will be a burden to the Port and other Oregon entities that have to manage dredged materials, as well as many of the agencies		
ODEQ	11/30/05	The reference section appears to be missing several cited references, especially from Chapter 7.	Chapter 15, 15-1 to 15-9	Will be checked during final edit.
USFWS	12/21/05	The reference to "Bridge 1999. Assessing contaminant sensitivity..." should be changed to: Dwyer, F. James, Douglas K. Hardesty, Christopher E. Henke, Christopher G. Ingersoll, David W. Whites, David R. Mount and Christine M. Bridges. 1999. Assessing Contaminant Sensitivity of Endangered and Threatened Species: Toxicant Classes. EPA/600/R-99/980. U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Gulf Ecology Division, Gulf Breeze, FL. 15 pp.	Chapter 15, Page 15-1	
Floyd Snider	11/30/05	On Page 5-14 in Section 5.9.5, the SEF contains language and process about the "new sediment surface exposed by dredging." The guidance recommends that the newly exposed surface "must be considered", will be evaluated on a case-by-case basis, and may require the dredging proponent to over-dredge the site or cap the newly exposed bottom material. We take particular issue with the statement that the decision "to over-dredge or cap will be based upon the results of appropriate biological tests." This biological testing requirement, if taken literally as written, is extremely impractical in execution. The newly exposed sediment surface can be assessed via coring in the assessment phase (based on depth in core and proposed dredge cuts); however, it would be inappropriate to run biological tests on deeper, anaerobic sediments projected to be at the depth of the "new" surface after dredging for the following reasons: • Sediments that have been anoxic are known to pose problems during biological testing, and are not appropriate for immediate bioassay testing. • During the assessment phase, there would be insufficient volume from cores to perform biological testing. It would be extremely unfair to the dredge proponent and contractor to require an immediate test of the new surface upon exposure (which might cause test problems regardless, due to its poor	CONCERNS ABOUT POST-DREDGE SURFACE AND ADJACENT SEDIMENTS	

Commenter	Date	Comment	Section	Resolution
		<p>organic content, etc.), wait for bioassay results, and then allow the contractor to demobilize weeks later. Additionally, if capping were abruptly required based on the biological testing results, a change order would be required that would cause an expensive and possibly, difficult search for suitable clean capping material under severe time constraints. Akin to the requirements in the 1998 DMEF manual (which more clearly articulated the expectations concerning the treatment of newly exposed sediment surface), it would be more straight-forward to state that if the newly exposed surface appears likely to have lower chemical concentrations than the material removed (based solely on chemical concentrations), the exposed surface should be acceptable. In Section 5.9.5, the SEF states that surface sediments with elevated concentrations of chemicals of concern (COCs) adjacent to the dredge cuts "will be considered" and, if found to contain elevated COCs, it will be considered on a case-by-case basis for the potential recontamination of the post-dredge surface, or vice versa (dredging will affect the adjacent sediments). These statements have the net effect of expanding the area of sediment evaluation past the proposed dredge cuts, and may prove extremely onerous in terms of testing and negotiations. Will dredge proponents be required to test the entire surrounding area? What constitutes "adjacent" sediments? Will the dredge proponent have to perform sediment stability analyses to demonstrate that adjacent sediments will not slough into the project area? And so forth. If adjacent sediments with COCs are judged by RSET to be a "risk," will the dredge proponent be allowed to expand their dredge area to include this adjacent area, even if historical dredging permits have not originally included this area? This outcome seems unlikely, leaving the permittee little "solution" to a perceived problem.</p>		
ERDC	12/5/05	Throughout the document, recommend use of dredged material "management" rather than "disposal".	General	
ERDC	12/5/05	Peer-reviewed references need to be used rather than private reports.	General	
Floyd Snider	11/30/05	We have reviewed the "Northwest Regional Sediment Evaluation Framework: Preliminary Working Draft" (SEF) document dated September 30, 2005. It is understood that this guidance document will apply to maintenance dredging permitting as well as contaminated sediment related	General	

Commenter	Date	Comment	Section	Resolution
		<p>investigations. Since we assist clients performing maintenance dredging, we have a number of concerns relating to changes in the scope of testing, the focus of testing, and the increased process that will make dredge permitting onerous and obligate parties to exclusively use landfill disposal.</p> <p>We understand that this document represents a tremendous effort by numerous participants. We understand the desire to create a “one stop shopping manual” for sediment characterization, with associated sediment criteria. But the two scenarios—maintenance dredging and contaminated sediment cleanup—are covered by two distinct programs in Washington State for good reason. The questions asked in one process (say, maintenance dredging for permitted berths) and scope required to address those questions will inherently be different than the questions asked during contaminated sediments characterization. To create this umbrella document satisfying both needs, authors have, by necessity, left some issues open-ended to provide maximal flexibility. However, we are concerned that this vagueness will greatly increase the workload of the Regional Sediment Evaluation Team (RSET) during dredge permitting by requiring additional negotiation and consultations with RSET over the specifics of bioaccumulation testing and interpretation, water quality testing, post-dredge surface quality, adjacent surface quality and sediment stability, etc. Unless RSET is prepared to increase staffing or in some way expedite reviews, this will create a productivity problem for RSET and scheduling problems for dredge proponents. At a pragmatic level, it will greatly encourage upland disposal of sediments during maintenance dredging in an attempt to avoid the schedule uncertainty (and costs) for bioaccumulation testing.</p>		
Floyd Snider	11/30/05	Overall, in order to be all inclusive of contaminated sediment assessment issues, the document is written too broadly and, therefore, has lost focus on the key questions relevant to maintenance dredging (i.e., Is the material suitable for open-water disposal? Will the material cause impacts at a designated open-water disposal site?). Additionally, the open-ended and sometimes vague recommendations seem to obligate a more extensive coordination with RSET without	General	

Commenter	Date	Comment	Section	Resolution
		providing a good "roadmap" for the dredge proponent to follow, thus greatly increasing the uncertainty and timeline surrounding dredge permitting. The community would be better served by a manual that specifically addresses maintenance dredging with guidance, criteria, and a specific process focused on the assessment of maintenance dredging sediment. The following comments and associated discussions address these concerns.		
IDEQ	12/1/05	Another concern we have with the DSEF is that it did not address the protection of ground water. A large area of the Coeur d'Alene Region sits on top of the Rathdrum Prairie aquifer, designated a sole source aquifer by EPA and Idaho's only sensitive resource aquifer under the Idaho Ground Water Quality Rule. Upland or floodplain disposal of contaminated dredged material may impact this resource. Does the DSEF process involve disposal issues such as this? Does the scope of it's authority include ground water protection? If so, the DSEF should include specific direction on how to assess and protect this resource.	General	
IDEQ	12/1/05	There should be a consistency to the language used throughout the document. In places it states that it is a regulatory document, in others it mentions that it is guidance only, and in places mentions that States may have regulations as well.	General	
NMFS	12/5/05	<b>Bioaccumulation triggers.</b> The SEF still requires more details incorporated and emphasis placed on developing appropriate critical body residue values and bioaccumulation triggers for sediments. The SEF correctly recognizes the problem and presents some approaches to address the issue. NMFS is concerned about the amount of time it will take to develop toxicity reference values (TRV) and sediment bioaccumulation triggers (BT), and what will be done in the interim. The interim steps should clearly be laid out in the final version of the SEF. Sediment quality guidelines (SQG) for non-bioaccumulative contaminants and potentially bioaccumulative contaminants are not included in List 1 (bioaccumulative contaminants of concern). SQGs for these compounds protect only against effects on benthos. In many cases, SQGs may be a good tool for protecting against impacts on the salmonid/fish prey base, but the application of those guidelines depends on the bioassay data used to develop the criteria. However, SQGs are not	General	

Commenter	Date	Comment	Section	Resolution
		designed to protect against direct effects on fish. The criteria for this subset of contaminants need to be evaluated for their effectiveness in protecting salmonids and other fish. For example, the criteria for polynuclear aromatic hydrocarbons (PAHs) are definitely problematic, as sediment concentrations within the target range have been associated with liver disease and reproductive problems in benthic fish, as well as problems with growth and disease resistance in juvenile salmonids. This problem is mentioned in the SEF, but is not discussed at any length. It needs to be addressed by the Regional Sediment Evaluation Team (RSET) subcommittees, and any necessary changes should be incorporated into the next version SEF.		
NMFS	12/5/05	<b>Use of the Data.</b> There a number of places in the SEF where the statement says “data is” are made. These should all be changed to “data are.”	General	
ODEQ	11/30/05	The Sediment Evaluation Framework (SEF) should include additional information regarding its implementation. An introductory chapter or section should explain to applicants, consultants, and the general public how to use the SEF document. This should be short and would clarify the critical components of the SEF process. It would also be helpful to include an additional appendix that would outline the RSET Sampling and Analysis Plan review processes in all of the relevant agencies.	General	
ODEQ	11/30/05	Too much effort is made on trying to separate the requirements for dredging and cleanup. This makes it appear as if working on cleanup sites is an entirely new and different set of tasks. In most cases they are very similar and could be discussed at the same time while pointing out where they differ. This could simplify the document somewhat. It might also be helpful to clarify the relationship between maintenance dredging and cleanup sites that require dredging as part of the remedy	General	
ODEQ	11/30/05	The SEF should address the following two important topics:  <u>De minimis Area</u> - This document should address relative scale of the impact in relationship to toxicity and priority for cleanup. Once the nature and extent of the contamination has been clearly defined, small sites (to be defined in this guidance) might not warrant further consideration if the contamination does not contain bioaccumulative chemical(s)	General	

Commenter	Date	Comment	Section	Resolution
		<p>or is not a hotspot (commonly defined as 10x screening value). For example, contamination localized around an outfall underneath a pipe extending only in a 2 ft radius should not warrant further consideration unless it is a hotspot, contains bioaccumulative constituents, or is a unique habitat worth protecting. It would be a significant addition for this guidance to define a <i>de minimis</i> area as it relates to contaminated sediment impact.</p> <p><u>Background/Ambient Concentrations</u> - This document should contain a section on ambient chemical concentrations and guidance for considerations pertinent to chemicals that are below ambient concentrations. Metals are typically included in such a discussion but it would also be nice to extend the guidance to other man-made chemicals commonly found in the environment at concentrations that exceed toxicity/bioaccumulative screening values (e.g., dioxin)</p>		
Port of Seattle	11/30/05	<p>As envisioned, the scope of RSET is very ambitious, as a guideline for navigation dredging and sediment cleanup. This goes well beyond just the existing application of the Dredged Material Management Program (DMMP), in Puget Sound. The precepts of efficient, cost effective management of dredged materials could easily get lost in this approach. The balance between the need to protect the environment, and the need to achieve cost effective, rapid, reliable, regulatory decisions for navigation and commercial developments, is not achieved without a lot of resources and the inclusion of all major players, at a high level of effort. It was achieved in PSDDA through the inclusion of the Ports and WPPA in regular frequent meetings for several years. We don't see that kind of approach in the RSET process or this proposed SEF.</p> <p>One measure of the need for new regulations is the amount of environmental harm that is being done by continuing under the existing approach. Looking at the information from the disposal sites in Puget Sound and Grey's Harbor, there is a very good record of environmental stewardship, and a balance between a cost effective pragmatic approach and the need to protect the environment from the effects of contaminated sediments. Our concern is that this SEF and</p>	General	

Commenter	Date	Comment	Section	Resolution
		<p>the RSET approach will add unnecessary bureaucracy and impose unnecessary costly regulations to a system that in PS is not broken and has a long history of making successful, defensible decisions. Because of the far reaching implications of RSET and the potential application of the SEF all interested parties will have to invest a large level of effort to track the proposals and issue papers and attend all meetings to insure that a scientifically based, balanced, cost effective regulatory approach is agreed upon. Although RSET has stated that it does not get rid of the DMMP the SEF changes in a major way the process by which we have created and evolved the sediment evaluation in Puget Sound and other areas o western Washington. We feel that the SMARM approach of vetting minor proposed changes, that have been discussed in the open monthly DMMP meetings has proven itself to be a useful approach. This has been balanced by larger, inclusive topic specific meetings and work groups when dealing with major changes like fresh water standards, bioaccumulation, human health sediment criteria, etc. We feel that many important aspects of this balanced and inclusive process that has served the environment, the regulated community, and the regulators well, will be lost in the RSET/SEF approach.</p>		
Port of Seattle	11/30/05	<p>We have a serious concern that rulemaking policy and procedure is not being met by this process. There is not enough local stakeholder input to satisfy the existing procedure. This is especially true of the recommendations from the Issue Papers and the process for moving them forward. There are the important steps, such as the detailed cost analysis of the proposed changes, that we don't see accounted for in this framework. For example the approach to the bioaccumulative chemicals of concern will in fact end up setting the Washington Sediment Management Standards for humane health, if carried through to conclusion. We don't see there is enough detail in how the SEF will be incorporated into state rulemaking.</p>	General	
Port of Seattle	11/30/05	<p>It appears that the assumption is the RSET SEF will be just adopted in its entirety with no opportunity to modify individual aspects at the state or local level. If that is the case, then the high level of involvement, scrutiny, discussions of practicality, and cost effectiveness, etc. that need to accompany rulemaking need to be happening right</p>	General	

Commenter	Date	Comment	Section	Resolution
		<p>now with this SEF and these Issue Papers. This is not taking place. This process is far greater than just this comment period.</p> <p>If that is to take place only at the state rulemaking level, what are the procedures for a state, or a regional multi-agency program (like DMMP) to adopt just the parts of the SEF that it approves? We don't see those procedures detailed.</p>		
Port of Seattle		<p><b>Sediment Cleanups and Sediment Management Standards (SMS) and Procedures:</b>  It is recognized in this manual that Federal. Cleanups and cleanups in Idaho need to be looked at in a site specific manner, why is this not true also for Washington.. Many cleanups are being driven by a relatively small list of chemicals driving the risk. At such sites, doing extensive analysis, except in very specific locations would not be justified.</p> <p>How a state cleanup would be approached is not clear, At what point would it be expected to get RSET approval?, and what would be the process for that? Much of the sampling and testing occurs before any project is delineated, and once the proposed project is delineated, the area to be dredged is not being considered for open water disposal, so at that time most of the standard testing is mute.</p> <p>How the RSET program is going to be coordinated with joint CERCLA, MTCA sediment cleanup actions is a more complicated issue. Would these joint sediment cleanup investigations and feasibility studies be subject to RSET Guidelines if the state has accepted RSET as RSET has assumed that Washington would? How are these interactions going to work</p>	General	
Port of Seattle		<p><b>Coordination with CERCLA:</b>  Most of the major sediment cleanups in this region are being handled through the CERCLA program. The document indicates (p. 1-6) that the SEF would not be an ARAR at a CERCLA site and would not govern CERCLA actions. This point should be emphasized more clearly at multiple points in document.</p>	General	

Commenter	Date	Comment	Section	Resolution
		<p>Section 1.6.5 of the document states that all sediment evaluations in the northwest should use the same procedures. This concept fails to recognize the different decision objectives that are associated with different regulations and the differences in assessment requirements. The proposed approach does not, for example, acknowledge or appear to support the risk assessment guidance produced by EPA for assessing risks from contaminated sites. Also, while toxicity testing, with the use of simple hit/no hit rules, is sufficient for dredge material testing, it does not represent an assessment of unacceptable risks to the benthic community. We are not aware of any technical study that relates application of the hit/no hit rule to level of unacceptable risk; rather it represents a policy decision by an agency on how to define sediment quality.</p> <p>Given that the SEF is not grounded on the risk-based evaluation framework currently in place at most CERCLA sites, it would be difficult for respondents at a CERCLA site to use some of the "tools" in the SEF toolbox without contradicting EPA guidance on this topic.</p>		
Port of Portland	11/10/05	<p><b>The draft SEF lacks clarity with respect to roles, responsibilities, accountability and timelines for many of the processes proposed.</b> The lack of specific accountability and timelines is especially true of processes involving the RMT. The same issues for accountability are present in the current DMEF, and have proved problematic to the Port in obtaining, timely consistent responses and direction from the RMT on sediment issues. The Port recommends that all processes described within the draft SEF be rigorously reviewed for inclusion of specific roles, responsibilities, and accountabilities for all parties involved. The Port also recommends that in developing standards and requirement for items such as review and approval within the process, that the RSET carefully consider those requirements and timelines in association with other regulatory timelines and requirements, such as in-water work window availability, as well as with the natural sediment dynamics that contribute to dredging needs, such as the annual spring freshet.</p>	General Comments	

Commenter	Date	Comment	Section	Resolution
		<p><b>Sampling requirements, as well as other requirements and processes described within the SEF, do not always contribute to a management decision or other management or risk change for the sediments in question.</b> The SEF describes a multitude of requirements depending on the nature of the activity, the regulatory needs. These include development of SAPs, consultation with agencies, and agency groups, and sampling and analysis of sediments. In reviewing the processes and requirements as described in the SEF, it is not always clear whether all requirements contribute to a management decision, or lead to any change in management of the sediments in question. In the current draft SEF, it sometimes appears that the management/regulatory path is the same, regardless of sampling or sampling results. The Port believes that activities that do not contribute to decisions are burdensome for both the regulatory agencies and the regulated entities.</p> <p>The Port recommends that the purpose and intent of all requirements within the SEF be carefully reviewed for whether or not they contribute to a management decision, and that the purpose of requirements be explicitly stated.</p>		
WDOE	11/30/05	<ul style="list-style-type: none"> <li>• The RSET and authors have done a very commendable job of convening regional experts to draft white papers on a number of significant sediment evaluation/management issues and to prepare this DRAFT SEF that incorporates both new ideas and information.</li> <li>• Ecology agrees with the main goal of the SEF - sediment quality evaluations conducted throughout the region should become more consistent, especially in view of such shared water bodies as the Columbia and Snake Rivers.</li> <li>• The degree to which the RDT and RSET expect regional sediment quality evaluations to become more consistent, under the SEF, may be unrealistic. Especially when one considers there is potential for substantial differences between the parties involved (e.g., levels of desired protection among the states, existing state statutes/laws/ rules) and the project sites themselves (e.g., environmental</li> </ul>	General Comments	

Commenter	Date	Comment	Section	Resolution
		<p>characteristics/resources).</p> <ul style="list-style-type: none"> <li>• Ecology has the following reservations regarding the RSET process <ul style="list-style-type: none"> <li>• Only federal agencies appear to be fully empowered to resolve conflicts at the highest levels of the RDT, which differs from the highly successful “PSDDA Model”</li> <li>• Development of this DRAFT SEF has yet to involve many key stakeholders</li> <li>• “Consensus” herein means ‘agreement among most but not all participants’, but minority opinions on technical/policy issues are not represented in the document</li> </ul> </li> <li>• This DRAFT SEF is written in such a way that it is unclear just how proscriptive versus flexible it is intended to be.</li> <li>• FINAL SEF guidance must clearly state that sediment quality evaluations conducted for the purpose of cleanup/remediation, referred herein to as “sediment characterizations” or “site investigations”, need to be entirely consistent with state statutes/laws/rules, e.g., Washington State’s MTCA and SMS rule. As such, the DRAFT FINAL document will need to be reviewed by staff assigned to Ecology by the Office of the Attorney General.</li> <li>• The SEF provides substantially greater and more detailed guidance for evaluating sediment to be removed for navigation purposes than it does for evaluating <i>in situ</i> sediment quality and consequent risk. For this reason, the DRAFT SEF resembles a major revision of the DMEF. To achieve its goal of more consistency, the FINAL SEF (or future versions) will need to provide much more detail on cleanup and source control sediment evaluations. Further detail in these areas, however, should refer to and remain consistent with existing state regulatory requirements, e.g., Washington’s SMS and MTCA rules and accompanying guidance.</li> <li>• At this point in time, Ecology prefers to consider the SEF as technical and policy guidance (only) that describes “latest” science and “best” management. However, the agency must also be careful not to implement</li> </ul>		

Commenter	Date	Comment	Section	Resolution
		<p>“guidance” in such a way that it violates the State’s Administrative Procedures Act. For example, the freshwater SL1 and SL2 values proposed in Table 7-1 cannot be used by Ecology in a consistent manner to evaluate and make decisions about sediment quality at project sites without having first gone through the State’s standard rule making process.</p> <ul style="list-style-type: none"> <li>• The document should be more consistent in format when identifying differences between navigation dredging and cleanup evaluations.</li> <li>• Table 7-1. Ecology has not yet confirmed that the proposed freshwater sediment “SL1” values are protective of pertinent chronic/sublethal effects or <i>in situ</i> benthic health. As such, the values in this table should be used on an interim basis. They should not be used to “screen” for all areas of concern or as cleanup goals/levels at a site. If freshwater SL1 values do identify an area of concern then its geographic extent and eventual site boundaries should be determined using multiple lines of evidence and these, in turn, should rely heavily on state-of-the-art biological evaluations. The proposed freshwater SL1 values should also be compared to regional background concentrations before being adopted.</li> <li>• Ecology’s SEDQUAL database and analytical tool will be undergoing redevelopment in 2006, but retain all its current capabilities. The agency’s RSET representative, Tom Gries, is also on the redevelopment design team and will keep RSET apprised of the project and the long-term future of SEDQUAL.</li> </ul>		
ODEQ	11/30/05	How Does this SEF Become Final – the text is quite out-of-date.	General, Xvii	
Port of Seattle	11/30/05	<p><b>Establishment and Use of Reporting and Detection Limits (Issue paper # 1)</b></p> <p>We agree with the goal of establishing consistent conventions. There are several of the chemical that routinely cause analysis issues. This issue paper should bring out those situations to make others aware of the situation and propose cost effective solutions, or at least frame the issues fro future decisions.</p> <p>For example many SVOCs that are currently required for</p>	Issue Paper	

Commenter	Date	Comment	Section	Resolution
		analysis under SQS require additional SIM analysis, at additional costs, to ensure that reporting limits are below the SQS. These chemicals include: 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 2,4-dimethylphenol, 2-methylphenol, benzoic acid, benzyl alcohol, butyl benzyl phthalate, diethyl phthalate, dimethyl phthalate, hexachlorobenzene, hexachlorobutadiene, n-nitrosodimethylamine, n-nitrosodiphenylamine, n-nitrosodi-n-propylamine, and pentachlorophenol. In instances of large sites with no detected exceedences, it would be reasonable to do just a percentage of the stations for the additional SIM analysis.		
Port of Seattle	11/30/05	<b>SQGs for Petroleum Hydrocarbons (Issue paper #2)</b> We agree with the conclusion that this issue needs additional evaluation before proposing a regulation. There are many technical difficulties with the evaluated approaches, beginning with the assumption that there is a simple direct relationship between TPH in sediment and TPH in tissue.	Issue Paper	
Port of Seattle	11/30/05	<b>TEFs for Wildlife (Issue paper #5)</b> We agree with the conclusion that TEFs for wildlife are several years away from the point where they could be used in a regulatory framework. Our estimation of how close they are to being ready would probably be beyond that estimated in this issue paper. Though the issue paper states that they are "well established for assessing human health"... , we find many examples at major sites like the Hudson and the Husatonic where dioxin and PCB risk are calculated separately.	Issue Paper	Issue papers were included for informational purposes as drafts of what is now in Chapter 9, and are not being revised separately from Chapter 9. Responses to the comments made are provided below.  In general, RSET agrees with the comment. TEFs for wildlife will be included in the SEF once the Bioaccumulation Subcommittee feels confident that they have been adequately developed and peer-reviewed.
Port of Seattle	11/30/05	<b>PCB Analysis (Issue papers # 6 and 8)</b> The proposal is to analyze sediments for total PCBs by the Aroclor method (EPA 8082) and tissue samples for congeners by a method that has not been specified. It is not clear how the tissue data will be evaluated. Congener data can be used to calculate a total PCB concentration and the concentrations of dioxin-like congeners can be used to calculate TEQ values to assess 2,3,7,8-TCDD equivalent concentrations. If the congener data are intended to assess potential human health risks, then the only analytical option is EPA 1668 which is sufficiently sensitive to measure the dioxin-like congeners at concentrations of concern. The	Issue Paper	

Commenter	Date	Comment	Section	Resolution
		<p>general use of this method will greatly increase the analytical costs associated with bioaccumulation testing and tissue assessments. The RSET agencies should conduct a feasibility study on different sites in the Pacific Northwest on whether the risk estimates made possible by the TEQ data are sufficiently different than risk estimates made using the Aroclor data to justify the increased expense, before requiring this extra expense. In at least one major dredging area, the Duwamish, the total PCBs as measured by both Arochlors and congeners tracks very closely, and the resulting risks also appear to agree closely, indicating that for this area at least the extra expense of going to congener analysis on all tissue samples may not be justified.</p> <p>Issue Paper #5 stated that the wildlife TEFs are not sufficiently developed for general use which suggests that the congener data will be evaluated in terms of potential human health impacts. If human health is not the appropriate endpoint (i.e. tissue from laboratory bioaccumulation tests) then the congener data will presumably be summed and evaluated as a total PCB concentration. Aroclor analyses may be the more cost-effective and appropriate method for analysis of tissue samples if the intent is to generate total PCB concentrations.</p>		
Port of Seattle	11/30/05	<p><b>Bioaccumulation Testing and Evaluation (Issue Papers #s 16 – 18 and 21)</b>  For areas covered by DMMP we should keep the existing program while we look at means of updating. Updating should be based on real problems, where the existing system is working it doesn't need to be changed.</p> <p>The proposed risk-based approach to bioaccumulation testing may ostensibly be more health-protective based than the existing approach. However, there has not been a demonstrated problem at the existing dredged material disposal sites caused by using the existing approach. The proposed list of bioaccumulative compounds is much larger than the existing DMMP list. The analyses required for the entire list would be much more expensive than the existing analyses. For example, the analysis of dioxins and furans would increase the cost by approximately \$1000 per sample. It is also unclear how many of the analytes would</p>	Issue Paper	<p>Issue papers were included for informational purposes as drafts of what is now in Chapter 9, and are not being revised separately from Chapter 9. Responses to the comments made are provided below.</p> <p>Bioaccumulation issues are a real problem. It is not possible to determine whether or not the current approach is working, because we currently lack bioaccumulation-based criteria with which to evaluate that question. The current system raises significant bioaccumulation questions that are having to be addressed on a case-by-case basis, where a standardized approach would be helpful. ESA consultations are particularly hampered by the lack of a defensible approach to bioaccumulation.</p>

Commenter	Date	Comment	Section	Resolution
		<p>be evaluated. There is very little toxicity data available for many of these compounds. Further evaluation of method sensitivities, sample volume requirements and cost needs to be done to determine the feasibility of analyzing all these compounds.</p> <p>The existing sediment bioaccumulation triggers are based on toxicity test results, not directly based on bioaccumulative effects, but, as stated previously, this has not lead to a serious problem at the disposal sites. The result of using a risk-based approach, is likely to initiate much more frequent bioaccumulation testing and more frequent failures of the bioaccumulation testing due to risk-based tissue residue effects numbers based on often much less than robust data on individual chemical effects and species.</p> <p>Much work remains to be done on the development of bioaccumulation triggers (BTs) and tissue residue effects values (issue paper 16). One difficult issue will be the lack of tissue-based toxicity data for many contaminants. Another obstacle is effectively linking sediment and tissue concentrations without triggering the need for expensive bioaccumulation modeling. Empirical BSAFs are expensive to develop and frequently do not reflect the equilibrium partitioning theory on which they are based, particularly for wide-ranging organisms such as fish. The GIS-based approach of assuming that chemical concentrations in tissue will decrease proportionally with decreases in chemical concentrations in sediment is probably overly simplistic and unlikely to be a useful regulatory tool other than for approximate order of magnitude estimates. Any approach needs to take into account the home range of the fish, crabs, etc. on the dredged material disposal site, (as the DMMP approach does) or the cleanup site.</p> <p>Issue paper 17 proposes several approaches for modeling tissue BTs. The author suggests that RSET may want to consider non-standard endpoints. The use of these other endpoints would require regulators to speculate on how they relate the more fundamental endpoints of survival, reproduction, and growth. Although there are many techniques for calculating tissue BTs, the link between these</p>		<p>List 1 was intentionally focused on those compounds that are known to be bioaccumulating in the region and which are also toxic to human health, wildlife, or fish. These compounds will only be required to be analyzed for when they are known to be present at levels of concern in regional fish tissues.</p> <p>However, RSET is fully aware that there are significant cost and feasibility implications. While every attempt has been made to focus reason to believe evaluations on demonstrable problem areas, implementability issues may still arise. RSET intends to conduct a dry run or beta test once the TTLs are developed, prior to full implementation. This commitment will be added to Chapter 9 text.</p> <p>RSET agrees that calculating sediment BTs is the most difficult step and that home range needs to be included as part of that evaluation. Methods for calculating sediment BTs require additional effort once the TTLs are calculated. It may be that order-of-magnitude calculations are the best we can do.</p> <p>Many comments were received on which endpoints to include in the development of TTLs. Last year, the committee settled on growth, mortality, and reproduction, along with some behavioral endpoints subject to rigorous QA/QC evaluation. This conclusion will be re-evaluated again this year in light of comments received.</p> <p>Comparison to background, reference, ambient, or urban reference concentrations is a difficult issue on which different jurisdictions and regulatory frameworks disagree. We recognize that different definitions may be appropriate in different contexts, and will be working to spell that out more clearly in this next update of the SEF.</p>

Commenter	Date	Comment	Section	Resolution
		<p>BTs and predictable measures of effect is still highly uncertain. The authors highlight one paper (Dyer et al 2000) and report that “measured contaminant residues in field collected fish tissues that exceeded tissue guidelines...were found to be statistically significantly correlated with fish community health”. The authors of the cited paper (Dyer et al. 2000), however, point out that habitat value is a much more important determinant of fish community health and “it is dubious to overplay the statistical significance of [measured contaminant residues] as the vast majority of IBI variation remained unaccounted for.”</p> <p>Issue paper 18 proposes the development of tissue trigger levels for aquatic-dependent wildlife. It is critical that sources of uncertainty in these analyses are explicitly identified as discussed in the issue papers. Larger sites with sufficient site-specific data will be able to reduce some uncertainty with site-specific data. The uncertainty will be higher for smaller sites that are less well characterized. This issue paper states that “tissue trigger levels are developed based on toxicity studies for wildlife species as closely related to the species of interest at a site as possible” and that “the most straightforward approach to determine if concentrations of BCoCs are of concern in wildlife prey items is to compare concentrations measured in these organisms at a site to the dietary test concentrations from a well-conducted TRV study for the wildlife species of interest.” These statements seem to place emphasis on the choice of toxicity study based on the use of a closely related wildlife species. The document should acknowledge that the test species is one consideration in a weight of evidence approach to select the TRV, which includes the relevance of the endpoint, the length of exposure, exposure route, form of the chemical used, etc. It may be necessary to choose a TRV based on a less relevant species (i.e., domesticated species) because other aspects of the study are more relevant.</p> <p>Generally, the approach suggested in issue paper 21 follows state and federal risk assessment guidance. The author appropriately notes that it may be appropriate to compare TTCs to urban reference rather than background</p>		

Commenter	Date	Comment	Section	Resolution
		<p>concentrations for sites in urban environments. RSET should determine whether such an urban reference approach is appropriate for all TTCs, not just those derived for the protection of human health. As currently written, this approach is only mentioned in the context of this issue paper, not the other issue papers that discuss the derivation of TTCs. Furthermore, "urban reference" needs to be precisely defined so that site managers know to which sites this concept might apply.</p>		
Port of Seattle	11/30/05	<p>Issue paper 21 should be updated to recognize the recently released "Draft framework for selecting and using tribal fish and shellfish consumption rates for risk-based decision making at CERCLA and RCRA cleanup sites in Puget Sound and the Strait of Georgia" that was published by EPA Region 10. RSET should determine the implications of this guidance to the SEF and the potential applicability outside Puget Sound. If is not applicable, perhaps similar guidance should be developed using other fish consumption survey documents, such as the CRITFC survey.</p> <p>The author of issue paper 21 notes that it is "desirable to have a single TTC to address all human health considerations", but then notes that it may be beneficial to "derive more than one set of rates (e.g., a recreational and a high-end or tribal rate) depending on the specific situation." RSET should clarify the degree of flexibility available to site managers with respect to selecting appropriate TTCs based on different consumption rates, exposed populations, and area sizes relative to the exposure area for the fish and shellfish being consumed.</p> <p>The BCOC list of chemicals of concern that has been proposed for adoption by RSET includes many chemicals that are difficult to analyze using standard analytical techniques and will also have very limited toxicological data available so it will be difficult to interpret the data once it is acquired. The chemicals that will likely have elevated reporting limits due to analytical difficulties include: the alkylated PAH, phthalates, organotins including, tetraethyltin, triphenyltin chloride, pesticides including toxaphene, phenol compounds including nonylphenol, pentachlorophenol, phenol, and n-nitrosodiphenylamine. In addition, the</p>	Issue Paper	<p>Issue papers were included for informational purposes as drafts of what is now in Chapter 9, and are not being revised separately from Chapter 9. Responses to the comments made are provided below.</p> <p>Consumption rates are being compiled this year and presented to the subcommittee for evaluation. We will ensure that the new EPA guidance is included in that evaluation.</p> <p>The number of human health scenarios that is appropriate to include in the SEF will be developed this year in committee and will include at least two (dredged material disposal sites and urban cleanup sites). Additional discussion will need to be included for site managers, who are expected have more flexibility as long as departures are documented in a decision document.</p> <p>The only chemicals that are required to be addressed are those on List A, which do not include these non-standard analytes. Nevertheless, detection limits could still be a problem. RSET will ground-truth this issue once the TTLs are calculated.</p>

Commenter	Date	Comment	Section	Resolution
		<p>proposed risk-based approaches to developing tissue residue concentrations may require reporting limits below those currently attainable for many of these compounds. Until these issues have been resolved and it has been demonstrated that commercially available methods are sufficient for the analysis of these compounds it is premature to adopt the proposed analyte list.</p>		
Port of Seattle	11/30/05	<p><b>In-Situ Bioaccumulation Testing Recommendations (issue paper # 20)</b>            In situ Bioaccum testing has a lot of problems if you are trying to relate it to just sediment. Because of the other pathways of contaminant intake, the predation and other problems of cages set in the bottom, and the need to include multiple controls at the site as well as the control area to try and get a value for the water pathway, this is far from a straight forward approach that would have usefulness in a normal regulatory procedure.</p>	Issue Paper	
Port of Seattle	11/30/05	<p><b>Cost Effectiveness and Reliability (issue paper # 9)</b>            These issues should be at the forefront of this program, and it should be measured against the cost effectiveness and reliability of the existing programs such as DMMP.</p> <p>In conclusion, though the goal of consistency is reasonable, the path to achieve that goal needs to involve a lot more stakeholder input, a lot more flexibility, and a lot more analysis of the cost effectiveness of the proposed RSET bureaucracy and the impact of the proposed SEF. To get that input from these busy major stakeholders, the proposals should clearly outline the changes that will occur as a result of the adoption of each aspect. There are major procedural problems for moving these draft guidelines into mainstream regulations. There is a critical lack of in depth thought regarding how this proposal will coordinate with both state and federal cleanup programs. There are serious technical concerns with some of the proposed evaluation approaches in the SEF and future guidelines discussed in the issue papers. In short there is a lot more work to be done before RSET and this SEF are ready to move forward. We are concerned that in this effort we will lose the balanced collaborative approach that has made the DMMP and the SMARM approach a success. We are also very concerned that this will lead to a more costly dredging prohibitive</p>	Issue Paper	

Commenter	Date	Comment	Section	Resolution
		program that does no better job of protecting the environment.		
NMFS	12/5/05	Table of Contents – Appendix C Page ix. Is the Biological Testing – ESA Concerns (August 2, 2005) white paper going to be included in this appendix? It should be included in the final version of the SEF.	Page ix	
NMFS	12/5/05	What does this SEF do? The limited focus of chemical and biological effects only at the disposal site misses the potential effects incurred from exposure of sensitive life history stages to resuspended sediments (either contaminated or not) and any subsequent water column exposure at the dredging site. This concept of exposure and effects at the site of dredging should be incorporated throughout the document, and should be introduced in the preamble.	Page xiv	
NMFS	12/5/05	“It is intended only as guidance and best professional judgment should be practiced in determining appropriate uses of the draft framework.” Guidelines or guidance, as their name implies, have no legal standing and a decision maker is not constrained by them. This seems to be misleading. Throughout the rest of the document there are minimum “requirements” for evaluation of contaminated sediments (CS), biological testing, sampling, and “necessary” documents that are required to be submitted to RSET. If this is only guidance, by which authority or necessity does a member of the public or a regulatory manager implement these measures, which may be costly? It should be fully defined in the preamble.	Page xiv	
USFWS	12/21/05	Add “and assesses the risk of exposing organisms to contaminants during the dredging process”	Page xiv, 2 <sup>nd</sup> paragraph, end of 3 <sup>rd</sup> sentence	
NMFS	12/5/05	This section states that the SEF is consistent with state and Federal regulations. NMFS is concerned that this is not the case. A consistency review should be conducted before finalization of the SEF, and the results should be included in the final document.	Page xvi	
WDOE	11/30/05	<ul style="list-style-type: none"> <li>The preamble should list the regulatory authorities under which this document was developed, as well as any consequent limits to its scope, e.g., it does not supersede existing statutory authorities or adopted regulations.</li> <li>Page xiv, para 1. Ecology support use of phrases such</li> </ul>	Preamble	

Commenter	Date	Comment	Section	Resolution
		<p>as "It (the SEF) is consistent with Federal and state regulations", is "useful as part of a "toolkit" and is "intended only as guidance". The intent herein is clear, but it unfortunately is not entirely supported by text in subsequent chapters where language is more proscriptive. In this regard, the overall intent of the SEF could be further clarified.</p> <ul style="list-style-type: none"> <li>• Pxiv, para 2. Text here should also mention that sediment evaluations can also be conducted for the purpose of controlling sources of contamination.</li> <li>• Pxiv, para 3. Suggest emphasizing "regional consistency" here.</li> <li>• Pxxv, para 1. First use of "consensus" (see general comment above). Suggest defining here to mean 'agreement among most but not all participants'.</li> </ul> <p>Pxxv, RSET Subcommittees. Please clarify the status of all white papers - have they been finalized and formally "approved" by the full RSET? (See also P1-14, Section 1.6.2)</p>		