

Memorandum

To: Hanford Natural Resource Trustees
From: Jamie Holmes, Stratus Consulting Inc.
Date: 6/19/2009
Subject: Comments and responses to comments on draft data report

This memorandum presents our discussion of comments we received on the draft data report. We received comments from the Nez Perce Tribe and the Yakama Nation [and an email from Barb Harper alerting us to the fact that the environmental dashboard application (EDA) is now available]. We appreciate your comments and look forward to completing an improved draft. We have not provided responses to suggested minor changes – we will simply make the revisions in the final draft.

1. Comments Received from Nez Perce Tribe

Comment: In the meeting in Richland on June 2, there was some discussion about the various Hanford Site databases and the need for consolidating or integrating them all into one user friendly package that could be assessed by all the Trustees. The pros and cons of some of the specific software packages were also discussed. This is a task that has been proposed at Hanford for several years and would certainly be appreciated by all. The main reason this has not already happened is because of the effort and budget associated with this task. People have estimated that it would take a team (5-10) people full time for a year if not longer to achieve this task and would cost hundreds of thousands of dollars. It is a monumental effort. There needs to be some clarification and discussion about this effort, scope, and associated budget either in this document or some other forum. At the present time we don't see the budget that could support this effort unless we are talking about taking on a subset of the information or scaling back based on some criteria.

Response: We concur that the integration of all electronic databases into a single package would require a very large effort. The details and feasibility of the proposed data management plan described in our draft report depend, in part, on the feasibility of the Trustees obtaining environmental data from DOE/CHPRC. At this time, therefore, we recommend deferring final or detailed data management design plans until this question has been resolved. However, the intent of our basic recommendation regarding development of a data management system is to allow the Trustees to analyze data independently.

Ultimately, the specific design of a data management system will depend on the quantity of data to be managed and the budget available to the Trustees for such management. To manage data at other natural resource damage sites in a manner that provides flexibility and use by the Trustees,

we typically house information in an Access database or multiple databases. However, the quantity of available Hanford data, particularly for groundwater, may exceed the capacity of Access. Database systems that can handle very large datasets, such as Oracle or Sybase, are very expensive, and typically require full-time technical staff such as SQL programmers. Thus, we typically suggest dividing very large datasets into smaller datasets that can be accommodated in Access and thus are more readily usable by the Trustees.

We will revise the draft report to clarify our recommendations regarding this issue.

2. Comments Received from Yakama Nation

2.1 General Comments

Comment: Please provide a summary of recommendations for data integration and management. What type of database system(s) should be developed for the natural resource damage assessment (NRDA) project, at least for the injury assessment plan phase? What is the recommended software and hardware? How can it be housed independent of DOE? How can all the Trustees have access to the information? How should it be maintained?

- ▶ **Response:** See response to Nez Perce above. We will expand on this topic in our revised report.

Comment: Throughout the report, you mention that the Trustees will need to work with DOE to gain access to specific data including data that is currently being collected. The main issue appears to be access. Might it be best for the Trustees to have their own database to eliminate access restrictions and other obstacles?

- ▶ **Response:** See response to Nez Perce above.

Comment: The report states that there are numerous current and future documents and data that have been designated as official use only (OUO) and will therefore only be available to individuals who have a Hanford badge, an account on the Hanford Local Network, and specific permission from DOE. Stratus suggests that the Trustees designate a point of contact (POC) who will have access to DOE OUO data. Might it be desirable for each Trustee organization to have a designated POC who can access, evaluate, analyze, and review DOE OUO data? This option, however, may create other concerns regarding turn-over and loss of institutional knowledge that could otherwise be better maintained within the larger group. This issue needs to be discussed further.

- ▶ **Response:** We concur that this is a topic for conversation among the Trustees. The POC role could be designated to one or more representatives. The number depends on Trustee preferences regarding efficiencies, institutional knowledge, and data dissemination. As a general matter, we have found that the more parties that are involved in data management, the greater the risk of multiple, non-compatible datasets being propagated. This should be balanced against Trustee review needs.

Comment: It is our understanding that the CHPRC contains more information than just groundwater data. The Plateau Remediation Contractor database supports Fluor Hanford, the plateau remediation, and tank farm projects. Please provide a description of the type of environmental information contained in the CHPRC.

- ▶ **Response:** It is our understanding that CHPRC maintains almost all the databases described in the draft data report, except for Washington Closure's river corridor database, including the Hanford Environmental Information System (HEIS). We will expand and clarify this description in the revised draft.

Comment: A potentially important outstanding issue is the huge TWINS database, which apparently covers pre-1990s information. Where do these data reside now? What types of data are in it? To where did the information get "migrated?" In what form is the information and how can it be accessed and used by the Trustees? Where does the TOPS (top of geologic data) reside, what form is it in, how can it be accessed? Please answer these questions in the report in as much detail as possible.

- ▶ **Response:** We will add some information about TWINS and TOPS. Our understanding from CHPRC is that TWINS is a tank waste inventory database. As discussed in the June 2 meeting, we do not feel that the Trustees need to quantify and categorize all liquid waste and contaminants of concern (COCs) in the tank farms. It is likely that there are sufficient readily accessible data to quantify injuries in the tank farms.

Comment: During November interviews, we were told about the pending release of EDA, a new tool to access and use Hanford data. Please describe this and how the Trustees might be able to use it.

- ▶ **Response:** The EDA is now live at <http://environet.hanford.gov/eda>. We will include it in the final draft.

Comment: From our review of the Phase I SOW, we believe this report should be discussing data integration too. Can you address this in a new section of the report and provide a schematic diagram of what pieces (sources of information) you see going into this integration effort? This comment elaborates more on our 1st comment above.

- ▶ **Response:** We will address data integration in the revised draft. We will consider developing a schematic diagram as suggested.

2.2 Specific Comments

Comment: Page 8. Please note the time period for which annual groundwater monitoring reports are available. Is pre-2007 data available in electronic format from DOE such that the Trustees can access and use it?

- ▶ **Response:** The EDA includes pre-2007 data. We are not aware of zipped data files available for years other than FY2007 and FY2008.

Comment: Page 12, Section 2.2. You bring to our attention that some sources are not available unless the party has specific permission from DOE. You also mention designating a specific POC to access OOU data. However, all Trustee parties need access and should not have to rely on another party. Data need to be accessible and transparent to all Trustees.

- ▶ **Response:** See above.

Comment: Page 12, Section 2.2.1. Note that biological information is not included in the HEIS database. This is an important point given the emphasis placed on the HEIS system in this report.

- ▶ **Response:** While HEIS concentrates on media such as groundwater and soil, a general query of entries where media = biota yields nearly 182,000 hits. However, those are contaminant concentration data, and the default query interface within HEIS does not include enough fields for the queries to be useful. The specific design of tables within a database, including biota tables for toxicological and life history data, is a more appropriate task for the Injury Assessment Plan (IAP) phase. We will expand our discussion in the revised draft.

Comment: Page 16. It is noted here that the WIDS data for the River Corridor are out of date. How and when will this be resolved, given that RODs will be issued soon for these areas?

- ▶ **Response:** Both CHPRC and Washington Closure Hanford (WCH) told us that they recognize the need to share updated files. We do not have the specifics of how and when this will be done.

Comment: Page 19. From the November interviews we gather that the Tank Farm Vadose Zone datasets are not in HEIS and that the data may not have associated X,Y,Z coordinates. Please describe the Tank Farm Vadose Zone Data in this section. What type of information does it contain and how can it be accessed by the Trustees?

- ▶ **Response:** We will further investigate these data and include the findings in the final report.

Comment: Page 22. The report mentions ORP's development of an independent comprehensive analysis of site-wide groundwater. What about access to the assumptions used in analysis along with seeing the validation process that it went through?

- ▶ **Response:** We will ask Woody Russell and include the response in the revised report.

Comment: Page 22, Section 3.2. Should the Trustees obtain the raw data related to the river component to validate appropriate QA/QC? How will this be addressed in this data report?

- ▶ **Response:** As we discussed in the June 2 meeting, we do not think it is likely to be worthwhile to duplicate the data validation process. However, we do recommend that the Trustees review data that were rejected during the quality control process and the rationale for the rejection. We will add this to the revised report.

Comment: Page 22, Section 3.2. Uploading the Columbia River RI data into HEIS will not get us the biological information associated with the study. The Trustees should have access to all of the RI data collected, hopefully by the end of 2009. Filtering all data through HEIS will have limitation since it cannot accommodate biological data (for fish, as an example).

- ▶ **Response:** We do not recommend filtering all data through HEIS. We recommend that the Trustees build an entirely separate database which includes HEIS and non-HEIS data alike. We will clarify this in the final report.

Comment: Page 23, Section 3.3. The statement that "Commencing the injury assessment prior to the onset of this data collection gives the Trustees the opportunity to request that the data collected are sufficient for evaluating natural resource injuries in addition to evaluating risk and determining remedial actions" doesn't make sense. The injury assessment will not be commenced prior to this data collection!

- ▶ **Response:** Initial activities undertaken during an injury assessment include activities undertaken well before the release of an IAP. We are optimistic that the Trustees will begin some of these activities prior to data collection in 2010. We will reword this statement with appropriate caveats to acknowledge that post-IAP assessment activities will not commence prior to this data collection.

Comment: Page 25. How can the Trustees' data management system be independent from DOE control?

- ▶ **Response:** It is our intent to recommend that the Trustees (including DOE) develop and maintain a data management system that they can query independently of ongoing DOE remedial/response processes to inform the injury assessment. We will attempt to clarify this point in the revised draft.

Comment: Page 27. Under Data Manager, what recommendations does Stratus have to manage and protect Tribal culturally-sensitive information in a database? Might this type of information need to be housed separately and perhaps with the Tribes themselves to protect against FOIA or other releases of the information? EPA has stated that they could not protect it, and that likely applies to DOE as well.

- ▶ **Response:** We concur that such information might need to be housed separately. We will address this in our revised report.

Comment: Page 30. You mention a Trustee database. What does this database look like? Where is it housed? How and by whom is it managed?

- ▶ **Response:** See response to similar questions from the Nez Perce above.

Memorandum

To: Hanford Natural Resource Trustees
From: Jamie Holmes and Josh Lipton, Stratus Consulting Inc.
Date: 6/19/2009
Subject: Responses to Trustee comments on draft conceptual site model

1. Introduction

This memorandum presents our discussion of comments received from the Trustees¹ on the draft conceptual site model (CSM) of May 6, 2009. We very much appreciate the amount of effort that went into the review of the draft CSM, as shown by both the thoughtfulness and level of detail of the comments we received, and we believe that both the next draft of the CSM and the overall injury assessment planning process will benefit from this careful review.

Each set of comments identified both general and specific issues. We have not responded to each of the individual comments that we received. Many of the specific comments addressed typos, grammatical changes, and minor factual errors. We will correct those errors in our next draft and do not discuss those comments further in this memorandum. Certain other technical comments did not appear to be contentious and thus are not addressed in this memorandum. Rather, we focus our discussion on the more general, "first order" (to use Oregon's term) comments that we received, as well as certain comments that did not appear to represent consensus Trustee views as we understand them from the CSM planning workshops. We then discuss specific substantive comments the resolution of which requires some judgment on our part. If you have any concerns regarding our proposed resolution of the (sometimes conflicting) comments, please do not hesitate to contact us.

2. First-Order Comments

Issue: Provide context for the CSM and identify relationship to Injury Assessment Plan (IAP)

- ▶ **Comments:** Several comments suggested that the CSM should contain a discussion of how the CSM relates to the IAP process.

1. We received comments from the Yakama Nation, the Department of Energy (DOE), the U.S. Fish and Wildlife Service (USFWS), the Nez Perce Tribe, Barbara Harper (on behalf of the Umatilla Tribe), the State of Oregon, and the State of Washington.

- ▶ **Discussion:** We agree that such a discussion would aid readers. We will add text addressing this issue to Section 1. We will reiterate the relationship between the CSM and the IAP in selected sections throughout the document.

Issue: Level of detail/specificity

- ▶ **Comments:** We received a number of comments that addressed the level of detail and specificity of the data review. These comments, however, were not consistent across Trustees. Some Trustees requested expanding the level of detail of the presentation, while other Trustees recommended keeping discussions broader in order to provide for greater flexibility in injury planning.
- ▶ **Discussion:** The inconsistent nature of the comments we received points to the challenge of preparing a CSM document for injury assessment planning purposes. On the one hand, the greatest degree of flexibility is achieved if the presentation remains relatively general. Moreover, the intent of a CSM is to provide a *conceptual* framework for an assessment, not to present a full inventory of all possible information. On the other hand, it can be difficult for purely general, conceptual descriptions to achieve the level of site-specificity necessary to inform injury assessment planning. In revising our draft, we propose to retain the overall level of specificity and detail presented in our draft. As recommended by Oregon, we will temper the language used, however, in favor of terminology such as “examples of...,” “non-prioritized illustrative lists of ...,” etc. We also will clearly reference more detailed inventories (e.g., the Ridolfi list of species) to ensure that the examples presented in the document are not viewed as being comprehensive, exhaustive, or otherwise limiting with respect to injury assessment planning.

Issue: Temporal extent of injury

- ▶ **Comments:** We received several comments related to the temporal extent of injury covered by the CSM. Some comments noted that the CSM does not provide any analysis of the temporal extent of injury, including comments indicating that neither past nor future injuries were well described. Other comments suggested that the CSM provide a discussion of legal limitations regarding past losses.
- ▶ **Discussion:** Section 1.2 of the draft CSM stated that “The temporal scope of the CSM explicitly recognizes that natural resource damage authorities enable the Trustee Council to quantify damages for losses that have occurred in the past, are ongoing at the present time, and may continue to occur in the future as a result of releases of hazardous substances, by-products of releases, and response actions. The CSM contemplates and provides for consideration of past, present, and future injuries and damages.” We believe that this statement is consistent with Trustee discussions in which we have participated, as well as both natural resource damage assessment (NRDA) precedent and legal

underpinnings. Further, the draft CSM discusses both past conditions as well as potential future outcomes related to response actions. We do not think that the CSM should go into detailed discussions of past and future injuries; this would be more appropriate for the injury assessment. However, we will add language to selected sections of the CSM to stress that injuries and services may vary over time and that the injury assessment will consider past, present, and future conditions.

Issue: Spatial extent of CSM

- ▶ **Comments:** We received several comments that addressed the geographic extent of the CSM. The Yakama Nation noted that the Trustees have not limited the geographic extent of the injury assessment to the Hanford Reach or the Hanford Site, emphasizing that the Hanford Assessment Area (i.e., locations where hazardous substances have come to be located) is the appropriate geographic unit for assessment. Other comments noted that certain locations less proximate to the site may be less likely to be injured, at least under current conditions. Finally, other comments suggested that use of the Priest Rapids Dam as the upstream extent of potential injuries was arbitrary and unnecessarily limiting in the injury assessment planning phase.
- ▶ **Discussion:** As indicated in the Yakama Nation's comments, the CSM workshops emphasized that the geographic extent of the injury assessment should not be limited at this time, and that the spatial extent of injury in the past was greater than would be represented by considering current conditions only. This was reflected in the draft CSM by including discussion of the Columbia River system downstream to the Pacific Ocean (see Sections 1.3, 6.2, and 6.4), as well as discussions of potentially affected terrestrial areas beyond the Hanford Site (Sections 1.3, 7.2, and 7.4). Notwithstanding the inclusion of discussion of these other areas, the CSM draft presented substantially more information on the Hanford Site and the Hanford Reach. We will revise the draft as follows: (1) we will include additional language throughout the CSM to clarify that the emphasis on Hanford Site/Reach information is illustrative of the CSM and is not intended to circumscribe or limit injury assessment planning, (2) we will broaden our discussion of downstream and terrestrial habitats and species (much of this material had been contained in the "proto-draft" of the CSM and removed in an effort to focus on the "conceptual" elements of the CSM), and (3) we will delete language suggesting that the Priest Rapids Dam is a fixed geographic limit on the assessment area. However, because of the large areas and amount of detail that would be involved, we do not propose expanding the discussions of these "off-site" areas in Chapters 6 and 7 to the same level of detail as was presented for the Hanford Reach and Site.

Issue: Potential injury definitions

- ▶ **Comments:** We received several conflicting comments regarding the potential injury definitions presented in the draft CSM. DOE and the USFWS commented that “non-regulatory” definitions of injury should not be included in the CSM. In contrast, the Umatilla Tribe commented that the list of potential injury definitions should be expanded and that the definitions identified in federal NRDA regulations might preclude the use of state-of-the-art scientific methods. We also received a comment suggesting removal of the term “non-regulatory” as potentially implying less rigorous or acceptable.
- ▶ **Discussion:** We understand that the Trustees have not reached a consensus position regarding the types of injury definitions that ultimately might be included in an IAP. Further, we recognize that there are legal and policy arguments that may be made by parties regarding applicable injury definitions. The list of potential injuries included in our draft was intended to capture the breadth of discussion and opinions presented at the CSM planning workshops. Moreover, we note that the federal regulations provide for the use of injury definitions not explicitly contained in those documents. We propose making the following modifications to the CSM to address these conflicting comments: (1) retain the potential definitions of injury included in federal regulations; (2) retain the list of potential injury definitions of injury that are not specifically identified in the regulations, but replace the term “non-regulatory” with “other potential injury definitions”; (3) emphasize in the sections addressing these “other” injury definitions that the federal regulations provide for the use of “other” definitions of injury, and that these definitions contained in the text represent examples of other potential injury definitions that had been discussed in the CSM planning workshops but do not represent consensus positions; and (4) clarify that the list provided in the CSM is intended to help inform assessment planning, but that the ultimate selection of injury definitions and endpoints would be undertaken in the IAP phase.

Issue: Absence of conclusions/opinions regarding the nature and extent of injury

- ▶ **Comments:** We received several comments requesting that the CSM present a firmer suite of conclusions regarding injury.
- ▶ **Discussion:** We believe that the CSM document should emphasize *conceptual* aspects of the site that will aid in injury assessment planning. The intent of the CSM is not to reach conclusions regarding injury (either in the affirmative or the negative) and we suggest that it would be premature to do so.

Issue: Geological resources/soils

- ▶ **Comments:** We received several comments related to the treatment of geological resources in the CSM document. Oregon recommended development of a specific chapter or sub-CSM addressing geological resources. Several other comments noted that the use of a two-foot depth threshold for surface soils was arbitrary and unhelpful.
- ▶ **Discussion:** The suggestion that a specific sub-CSM be developed for geological resources is interesting and holds merit. At the same time, because this concept has not been vetted by the entire Trustee group and would require a substantial reorganization of the CSM document, we recommend completing this iteration of the CSM as currently organized and deferring the decision to a later date (the CSM is intended to be a living document subject to modification). We propose, instead, to add language to Chapter 1, as well as both the groundwater and terrestrial chapters, to discuss the treatment of geological resources (including providing appropriate references from the DOI regulations). We concur with the comments regarding the arbitrariness of a two-foot depth to define surface soils. The CSM planning workshops emphasized potential distinctions between biologically-active surface soils and deeper soils. We will retain language noting this conceptual distinction, but delete language implying that a two-foot depth profile should be used as a threshold.

Issue: Use of two-dimensional plumes to delineate groundwater contamination

- ▶ **Comments:** The Nez Perce Tribe commented that groundwater injuries should be described volumetrically (i.e., in three dimensions), not just using two-dimensional surficial representations. Oregon and Yakama also commented that the plume maps used in the draft CSM do not represent consensus positions.
- ▶ **Discussion:** We concur that groundwater injuries should be described volumetrically as well as two-dimensionally. We will add language to this effect. However, actual quantification should be undertaken in the injury assessment rather than the CSM. We will add clarifying text. With respect to consensus interpretations of existing groundwater data, we believe that it is appropriate to refer to the relevant DOE data and representations as being the primary sources of existing information. At the same time, we will add tempering language to indicate that the information is being included as illustrative examples to support the conceptual model of the site rather than implying that it represents the Trustees' conclusions regarding injury.

Issue: Biological resources included in the CSM

- ▶ **Comments:** Oregon commented that the draft CSM does not make explicit reference to resources or species that may have been locally extirpated as a result of Hanford

operations. We also received several comments that the draft CSM did not contain sufficient reference to habitat-level receptors and attributes for both aquatic and terrestrial resources. We received related comments suggesting that the text of the CSM be expanded to emphasize the importance of ecological and human use services provided by intact habitats. Finally, we received several comments indicating that the draft CSM presented too much focus on species of conservation concern, rather than the full suite of potentially affected species.

- ▶ **Discussion:** We will include additional language addressing the general tenor of the above comments (i.e., the importance of population, habitat, and landscape-level attributes and functions; emphasis that all species are potentially relevant, not just species of conservation concern). However, because the CSM is intended to provide a conceptual paradigm, we think that a general treatment of the issues is more appropriate than commenting on the presence or absence of specific organisms.

Issue: List of potential hazardous substances

- ▶ **Comments:** We received several conflicting comments regarding this issue. Oregon and Nez Perce commented that language regarding the use of herbicides should be expanded. DOE commented regarding limitation of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liabilities for use of herbicides if done in accordance with Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) labeling. On a related matter, DOE requested narrowing the definition of by-products of hazardous substance releases. We received other comments suggesting that we expand the list of hazardous substances.
- ▶ **Discussion:** We recognize that the Trustees have not reached policy or legal consensus regarding these issues. There was extensive discussion of the use of herbicides (as both response action and potential stressor) during the CSM planning workshops. We believe that the CSM should identify conceptual issues raised by the Trustees that are relevant to injury assessment planning rather than addressing questions regarding legal liabilities. We propose retaining the discussion of herbicide use at the Site (as well as by-products of hazardous substances) but adding language to Chapter 3 noting that the broad definition of hazardous substances used in the CSM is intended to convey the nature of site activities and stressors and does not imply Trustee or legal consensus regarding potential for natural resource damage liability for all substances identified in the CSM. Similarly, we propose adding language indicating that the substances identified in the CSM document may not represent the full suite of hazardous substances released into the environment.

Issue: Legal interpretations; limitations on liability

- ▶ **Comments:** DOE provided a number of comments related to legal interpretations of natural resource damage regulations and limitations on liability (e.g., pre-1980 releases).
- ▶ **Discussion:** We recognize that the Trustees have not reached policy or legal consensus regarding these legal issues and that the Trustees may have differences of opinion and interpretation. We believe that the CSM document should emphasize the technical aspects of a site conceptual model (rather than adopting the legal or policy positions of any one Trustee), but within a context that is relevant to injury assessment planning. We will modify language to indicate that the CSM is not intended to imply otherwise.

Issue: Inclusion of CSM diagrams from other documents

- ▶ **Comments:** The Yakama Nation commented that the CSM should be revised to contain (e.g., in an appendix) copies of other CSMs such as the Columbia River Comprehensive Impact Assessment (CRCIA).
- ▶ **Discussion:** At this time we do not propose including existing CSMs as suggested by this comment. It was our understanding from the CSM planning workshops that there were a number of strong Trustee concerns and objections regarding these existing CSMs and that their inclusion might be misconstrued as an endorsement of the underlying documents. However, if the Trustees wish to revisit this issue, we are willing to include (and appropriately caveat) some relevant figures from existing CSM documents in an appendix. We note, however, that a broader review and analysis of the existing CSMs, many of which (e.g., the CRCIA) are quite lengthy, seems inappropriate and beyond the reasonable scope of this NRDA CSM document.

Issue: Treatment of uncertainty

- ▶ **Comments:** We received several comments suggesting that the CSM document should contain a more explicit discussion of uncertainty. Related comments addressed the need to emphasize uncertainties regarding the use of classified materials.
- ▶ **Discussion:** We concur that the draft CSM did not contain a discussion of uncertainty. We do emphasize, however, that the relevant uncertainties for this document relate to the development of a conceptual model to aid in injury assessment planning, not scientific uncertainties inherent in the assessment phase. We will add relevant language to Chapter 1 addressing uncertainties in the CSM process.

3. Specific Comments

As noted in Section 1, the majority of the specific comments can be readily addressed in our revised text. In this section, we discuss selected specific issues (not otherwise addressed above) the resolution to which requires judgment on our part.

3.1 Specific Washington Comments

Comment: Include a larger suite of species for each habitat and a discussion of which life stages occur in which habitat.

- ▶ **Discussion:** We can refer to a larger suite of species for both aquatic and terrestrial resources, including referring to the comprehensive list compiled by Ridolfi Inc. However, discussion of life stages and habitats would be exceedingly time-consuming for all site species, is not known for all species, and consequently would potentially be unduly limiting at this time. We recommend deferring such judgments to the IAP phase.

3.2 Specific Oregon Comments

Comment: Revise Section 3.1.6 to include suspected leaks from individual tanks.

- ▶ **Discussion:** We will revise the language in the section to emphasize that selected examples are provided to illustrate potential sources. However, we would prefer to avoid references to anecdotal information.

Comment: Include water quality standards in Table 5.1.

- ▶ **Discussion:** In light of Trustee concerns regarding appropriate definitions of (and standards for) injury, we recommend not including water quality standards at this time. The information provided in the table appears sufficient for development of a CSM.

Comment: Identify native vs. introduced biota in Sections 6 and 7. Also note population trends.

- ▶ **Discussion:** We recommend not making this revision for several reasons. First, it is unclear whether consensus exists among the Trustees as to whether a preference hierarchy should be used to differentiate between native and introduced species. Second, the distinction between native and introduced species is not always clear. Finally, discussion of population trends for species seems to be both unnecessary for the CSM and potentially misleading in terms of injury assessment planning.

3.3 Specific Umatilla Comments

Comment: Use of the term “unavoidable” response actions.

- ▶ **Discussion:** As noted in the comment, the term “unavoidable” is used with reference to the DOI regulations. Given that this issue is an area of contention between the Trustees, we recommend retaining the regulatory terminology.

Comment: Remove reference to “committed use.”

- ▶ **Discussion:** The discussion of committed uses is intended to address language contained in the DOI regulations.

Comment: Expand list of services (groundwater, aquatic, etc.).

- ▶ **Discussion:** Our intent was to provide examples of services, not an exhaustive list of all possible services. Please let us know if you have some specific additional services that you would like included.

Comment: Add discussion of how to address past air emissions.

- ▶ **Discussion:** This appears to us to be a subject for the IAP, not the CSM.

3.4 Specific DOE Comments

Comment: Various legal issues.

- ▶ **Discussion:** As noted above, we propose to “finesse” these legal issues (which clearly are the subject of ongoing disagreement between the Trustees but which nonetheless were discussed in CSM planning workshops) by modifying and tempering the language in the CSM to ensure that it does not imply resolution of these matters or adoption by the Trustees of specific policy or legal positions.

Comment: Opportunities for early restoration.

- ▶ **Discussion:** We will address this topic in our final report under this contract. We do not propose to address early restoration in the CSM.

Comment: Add discussion of biological mitigation (e.g., page 3-19 of draft CSM).

- ▶ We will add a general discussion of biological mitigation. However, we do not propose to describe specific mitigation or to comment on whether, how, or to what extent the mitigation restores natural resources to baseline conditions or provides compensation for interim losses. These are, however, appropriate issues to address in the IAP.

Comment: Add discussion of permitted actions (e.g., page 4-20 of draft CSM).

- ▶ **Discussion:** We do not think that the CSM should contain discussion or evaluation of what is fundamentally a legal issue regarding liability.

Comment: Provide discussion of whether committed uses of groundwater were documented prior to detection of hazardous substances.

- ▶ **Discussion.** This comment appears to address legal issues that seem outside of the necessary scope of the CSM. We will revise text to temper conclusions.

3.5 Specific Nez-Perce Comments

Comment: All leaks and spills need to be well documented.

- ▶ **Discussion:** Comprehensive documentation of leaks and spills may be a task that the Trustees wish to undertake as part of the assessment process. However, we do not think it is necessary for the CSM.

Comment: Include discussion of water level management of Priest Rapids Dam and potential effects on salmon, riparian wetlands, and riverine wetlands.

- ▶ **Discussion:** We concur that water level management represents an important baseline consideration at the site and we will include appropriate language. However, specific discussion of such influences on individual species or habitats does not seem warranted for the CSM.

Comment: Include a map showing the location and size of various aquatic habitats.

- ▶ **Discussion:** We concur that such information would be useful. However, we feel it is a task more appropriate for the IAP phase than for the CSM.

Comment: Identify “obvious” COCs for potential aquatic injury.

- ▶ **Discussion:** It was our understanding from the CSM planning workshops that identification of obvious or priority contaminants of concern (COCs) was not broadly desirable for the Trustees at this time.

Comment: Subdivide aquatic habitats (e.g., slow v. slack water, etc.)

- ▶ **Discussion:** It was our understanding from the CSM planning workshops that such subdivisions were not desired at this time, primarily because the selected “subdivisions” could differ depending on the resource or receptor of concern.

Comment: Difficulties in designing or implementing a study to address past air injuries.

- ▶ **Discussion:** We believe that this topic should be reserved for the IAP, not the CSM.

3.6 Specific Yakama Comments

Comment: Please include more information about past releases of radionuclides and where they were known or could have potentially come to be located.

- ▶ **Discussion:** We concur that this issue is relevant to injury assessment planning. However, we do not believe that such an expanded discussion is warranted in the CSM. As noted above, we propose expanding our general description of past exposures and injuries. (Similarly, we propose to expand our discussion of potential future injuries.)

Comment: Use of the term “unavoidable” when discussing injuries from response actions.

- ▶ **Discussion:** See proposed action in response to similar comment from Umatilla.

Comment: Re page 4-1, provide a complete list of biotic and abiotic components of pathways.

- ▶ **Discussion:** As requested, we will review the CSM memorandum of 4/7/09. However, listing “all” pathway components seems unnecessary for the CSM, as opposed to illustrative components.

Comment: The aquatic and terrestrial chapters are very basic and do not provide detailed information.

- ▶ **Discussion:** As noted in our responses to general comments, there were differing opinions among Trustees regarding the appropriate level of detail to include in the CSM

report. We will expand some of the discussion of these two chapters to include specific and more detailed information that had previously been provided in the "proto-draft." However, the CSM is not intended to present a comprehensive review of all potentially relevant information or a complete inventory of potential effects on site resources. The level of detail requested by the Yakama Nation may best be deferred for the IAP or the assessment phase of the NRDA.

Comment: Include a discussion of ecological endpoints, criteria, or benchmarks.

- ▶ **Discussion:** Noting the disparate suite of comments received regarding injury definitions, we believe that inclusion of specific endpoints or benchmarks in the CSM should be deferred to the IAP.