TECHNICAL REVIEW COMMENTS ON THE "DRAFT PRELIMINARY WETLAND MITIGATION ASSESSMENT"

GENERAL COMMENTS

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Not applicable (NA) Page #: NA Line #: NA
Original General Comment #: 1

Comment: The text does not clearly present the methodology used to assess potential mitigation sites. Specifically, the methodology appears to be both inadequate and inappropriate to assess successful, potential wetland restoration and creation sites. The methodology should include detailed information regarding topographic, geologic, hydrologic, soil, climatic, and biological factors that need assessment to determine the feasibility of the potential wetland creation or restoration sites.

In addition, the text supplies inadequate explanation or rationale supporting the methodology apparently used. For example, discussion of data regarding the following is lacking or inadequate: soil types, depths, and distribution; bedrock nature and depth; perched water and groundwater depth, flow, and quality; hydrologic data such as drainage area sizes, drainage systems within each drainage area, runoff volumes, and peak discharge rates during storm events; vegetative cover; and climatic information, such as annual precipitation and evaporation rates. Because the presence of water in sufficient abundance and duration to develop hydric soil characteristics and support hydrophytic vegetation is the most critical wetland parameter, water balances need to be calculated for areas of interest. The assessment should be revised to address these issues.

Response: Comment acknowledged. A meeting conducted on June 20, 1995 entailed DOE's proposal for on-property wetland mitigation by expanding the Forested Wetland Area. The proposal also outlined the watershed study to be conducted for understanding the feasibility of expanding this area. Based on site knowledge (topography, habitat, soil, hydrology) it was concurred by all parties that Alternative 3 would contain the area most likely to potentially support on-property wetland mitigation. The intent of the watershed study was to determine the available surface water from the forested wetland and assess the water quality emanating from the forested wetland. USEPA did indicate a qualitative assessment of other potential wetland mitigation areas should be included, so DOE developed a qualitative approach to address other areas.

DOE believes the methodology clearly presents the intent of this document, which is to focus analytical efforts on the forested wetland area while qualitatively evaluating other options readily available for on-property wetland mitigation.

Action: Additional information will be included within each alternative to characterize perched water and groundwater. DOE does not believe the level of detail which USEPA is proposing for each alternative is necessary for this assessment, but it could be incorporated into the remedial design process. DOE anticipates that areas in addition to those evaluated within this assessment will be available for wetland mitigation in the future as a result of the post-excavation topography.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Executive Summary Page #: E-1 Line #: NA
Original General Comment #: 2

Comment: The text discusses a conceptual proposal for addressing wetland mitigatory requirements discussed during a June 20, 1995, meeting. The text should be revised to provide more background information about the development of this conceptual proposal and a justification for it.

Response: Agree.

Action: Additional text will be added to provide background on the conceptual proposal.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.0 Page #: NA Line #: NA
Original General Comment #: 3

Comment: This section describes the three alternatives for on-property wetlands mitigation. In general, the text provides inadequate descriptions of site soils, hydrology, and vegetation. The hydrologic data presented are very limited, and the text briefly discusses surface water flow only. As discussed in Original General Comment No. 1, information about depth to the water table and perched water, soil saturation, surface water runoff, evaporation, and precipitation is noticeably absent. Soils data (such as soil composition and distribution) and vegetation data (such as community type and density) are also absent. In addition, topographic discussion is limited to the stream channel and banks. More thorough discussion of these types of data is needed to accurately assess the wetland creation or restoration potential of each alternative. The text should be revised to address these issues.

Response: Agree.

Action: Additional text will be provided to characterize perched water and groundwater for each alternative.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.0 Page #: NA Line #: NA
Original General Comment #: 4

Comment: This section discusses a watershed study developed to assess general surface water quality and to evaluate surface water flow rates. The purpose of this study and its applicability to the wetland mitigation assessment is unclear. The text also does not clearly define watershed systems, explain how each system was chosen for study, or explain how flume measurements and hydrologic calculations meet wetland mitigation assessment objectives. The text should be revised to address these issues.

Response: Comment acknowledged. The purpose of this study was to assess the surface water quality of the forested wetland area and evaluate the surface water flow rates of the forested wetland using flume measurements and hydrologic calculations. The H-flumes allowed the necessary free-flowing conditions to enable measurement of surface water flow and the surface water flow was used to calculate mass loadings. The surface water flows provide an indication of available surface water hydrology to support wetland mitigation and also provide seasonal storage capacity of the watershed system. The surface water characterization data provides a baseline which could potentially be used in evaluating the offset of lost water quality functions from impacted wetlands. Providing a watershed baseline for surface water quality and surface water flows allows effective evaluation of watershed management practices in the context of restoration ecology. Wetland mitigation within this watershed is important to the contribution of watershed restoration. Information obtained from this study will be used during design to determine the extent of forested wetland expansion.

Action: The text will be clarified to indicate that the watershed boundaries were delineated from a USGS topographic map.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.1 Page #: NA Line #: NA
Original General Comment #: 5

Comment: According to the text, samples were analyzed to determine nutrient concentrations and mass loadings. Although this information may be useful for evaluating watershed surface water characteristics, the data are unnecessary to assess the viability and success of wetland restoration or creation. As previously mentioned, data collection and evaluation should be focused on the factors affecting the presence of sufficient water for a sufficient duration to support hydrophytic vegetation. The text should be revised to address this issue.

Response: Comment acknowledged. The impetus for sampling surface water was to ensure there were no potential contaminant concerns associated with Total Uranium related to on-property wetland mitigation. DOE found it prudent to also characterize other surface water parameters and surface water flows with the same field effort. This was presented and agreed to in the June 20, 1995 meeting with USEPA.

Action: None required.

Commenting Organization: U.S. EPA — Commentor: Saric
Section #: Conclusion — Page #: NA — Line #: NA
Original General Comment #: 6

Comment: The conclusions presented are generally based on insufficient or inappropriate data. For example, Alternative 1 is based on the assumption that the stream will be used as the sole water source for potential wetland creation at the site, which would require extensive stream bank excavation. Groundwater or surface water runoff contribution to the site's water balance is not considered. Limited water availability is also named as a primary reason for eliminating Alternative 2 as a potential wetland creation or restoration site. This conclusion appears to be inappropriate because it is based on insufficient data. The text should be revised to address these issues.

Response: Agree.

Action: Additional information on perched water and groundwater will be included for each alternative.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA — Commentor: Saric
Section #: Executive Summary — Page #: E-2 — Line #: 2
Original Specific Comment #: 1

Comment: The text states that some alternatives are not feasible based on the issue of habitat fragmentation. The text should be revised to clarify that some sites are not feasible because of the lack of necessary hydrology and soils, as well as habitat fragmentation.

Response: Agree.

Action: The text will be revised to provide additional detail on the feasibility of using other sites.

Commenting Organization: U.S. EPA — Commentor: Saric
Section #: 1.0 — Page #: 1-1 — Line #: 11
Original Specific Comment #: 2

Comment: The text states that a mitigatory ratio of 1 to 1.5 acres was established at the June 20, 1995 meeting. It should be verified that this agreement is in keeping with any previously established memoranda of agreement (MOA) between state and federal agencies, including the U.S. Army Corps of Engineers.

Response: Comment acknowledged. Wetland impacts are being addressed under CERCLA in accordance with the EPA approved Record of Decisions. USEPA is the lead agency under CERCLA and agreed with OEPA to a 1.5:1 ratio for wetland impacts.

Action: None required.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.0 Page #: 1-2 Line #: 5
Original Specific Comment #: 3

Comment: The text states that surface water quality and flow within two 40-acre watershed systems were analyzed. The watershed systems should be identified on a topographic figure, and the text should explain how the watersheds were identified. Also, the "influent and effluent" referred to in text only seems to pertain to surface water sampling locations within some kind of stream. Influent should include precipitation, storm water runoff from contributing drainage areas, base flow from streams and surface sources, seepage and springs from groundwater sources, and any water artificially added to the watershed. Effluent should include evaporation, plant transpiration, deep percolation below substrates, surface base flow, storm water flow, and water artificially removed from the watershed. In addition, characterization should also include water stored on the surface and in substrate pore spaces. The watershed characterization water balance information does not need to be measured in the field but can be calculated using scientifically accepted tables, figures, and methods appropriate for the site. The water quality sampling data are unnecessary to determine the potential wetland mitigation feasibility or lost wetland functions. The methodology and text should be revised accordingly.

Response: Agree in part. The influent and effluent only refer to the path of surface water flow. Additional variables encompassed by these terms will be evaluated during design. See responses to original general comments 4 and 5 which refer to the reason for collecting field data as opposed to desktop calculations.

Action: The watershed systems will be displayed with contours. The text will be revised to indicate that the watershed boundaries were delineated from a topographic map.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.0 Page #: 1-2 Line #: 16
Original Specific Comment #: 4

Comment: The text indicates that sampling occurred in 1995 and 1996 during seven independent storm events and that further study is needed. As mentioned in the Original General Comments No. 1 and 3, additional study information should include site or area climatic data, including average annual precipitation. This information is critical in assessing site water storage capabilities and eventual design considerations. The mitigation assessment and corresponding text should be revised to address these issues.

Response: Agree.

Action: Climatic data will be considered during design.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Figure 1 Page #: 2-2 Line #: NA
Original Specific Comment #: 5

Comment: The figure fails to label Paddy's Run or to provide a map scale. The figure should be revised to address these issues.

Response: Agree. However, the intent of this figure is to show the geographic location of the FEMP.

Action: The figure will be revised to include a map scale and to depict some of the site's features.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Figure 2 Page #: 3-2 Line #: NA
Original Specific Comment #: 6

Comment: The figure should indicate the location of the impacted wetlands and the map scale. In addition, the figure should include a legend explaining the wetland classification system used in the figure. The figure legend should clarify that the wetlands depicted are jurisdictional wetlands. The figure should be revised to address these issues.

Response: Agree.

Action: The figure will be revised to include impacted wetlands map scale, legend, etc.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Figure 3 Page #: 4-2 Line #: NA
Original Specific Comment #: 7

Comment: The figure fails to label Paddy's Run or to include a map scale. The figure should be revised to address these issues.

Response: Agree.

Action: The figure will be revised to label Paddys Run.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.0 Page #: 4-1 Line #: 2
Original Specific Comment #: 8

Comment: The text indicates that the alternatives include Paddy's Run Corridor, Northern Forested/Northern Isolated Wetland, and Northern Forested Wetland Areas. Figure 3 shows Alternatives 1, 2, and 3. The text and figure alternative titles should be revised to correspond.

Response: Agree.

Action: The figure will be clarified to show the relationship of text and figures.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.1 Page #: 4-1 Line #: 4
Original Specific Comment #: 9

Comment: The text indicates that three sampling sites were chosen and that samples were collected from three "locations in the center of the stream." Because the size of Paddy's Run Corridor is not indicated and the sampling locations are not shown, it is unclear whether the sampling is adequate or appropriate. Further, it is unclear why the stream bed was sampled rather than the potential footprint of the mitigation area. The text should be revised to explain the purpose of the sampling activity and to explain why the hydrology and soils outside the stream channel were not evaluated.

Response: Agree.

Action: The paragraph will be reworded to indicate that topography, soil, and hydrology were observed from the center of the stream. No actual samples were taken, only visual observations were recorded in conjunction with review of published data. These observations included the stream bed, stream banks, and areas adjacent to the stream bank.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.1 Page #: 4-3 Line #: 15
Original Specific Comment #: 10

Comment: The text indicates that extensive stream bank excavation would be required to supply wetland hydrology for this alternative, which assumes that the stream is the only source of water for the alternative presented; however, not enough site characterization data about hydrology, soils, topography, or the subsurface is presented to support this assumption. Also, redirecting stream flow would alter the ecological habitat. The text should be revised to address these issues.

Response: Agree.

Action: Additional information on perched water and groundwater will be included to support this idea.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.2 Page #: 4-4 Line #: 4
Original Specific Comment #: 11

Comment: The text implies that inundation of the meadow would be required to mitigate the impacted wetlands; however, wetlands require the presence of sufficient water of such duration to support hydrophytic vegetation. Inundation is therefore not necessarily required for successful wetland mitigation. The text should be revised to address this issue.

Response: Agree.

Action: The text will be revised to indicate the necessary topographic alteration required to provide sufficient water to support wetland conditions.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.2 Page #: 4-4 Line #: 16
Original Specific Comment #: 12

Comment: The text indicates that surface water flow restriction at this site "would preclude implementation of Alternative 3" and assumes that extensive excavation would be required "to lower the elevation for adequate water supply." The possibility of implementing more than one of the three alternatives has not previously been discussed. The text should clearly indicate that more than one alternative could be simultaneously implemented and that the selection of Alternative 2 would prohibit the selection of Alternative 3. It is also unclear why extensive excavation is required to provide an adequate water supply. The text should be revised to address these issues.

Response: Comment acknowledged. This paragraph is referring only to the potential consequences of the implementation of Alternative 2. This assessment does not support the idea of simultaneously implementing more than one of the three alternatives. Additional possibilities for wetland mitigation would be explored during design.

Action: None required.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 4.3 Page #: 4-5 Line #: 7
Original Specific Comment #: 13

Comment: The text indicates that Alternative 3 is conducive for wetland mitigation but does not present sufficient and adequate data to support this statement. The text should be revised to address these issues.

Response: Comment acknowledged. Section 5 provides sufficient and adequate data to support the implementation of Alternative 3. The acreage of the wetland to be supported will be determined within the wetland design.

Action: None required.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Figure 4 Page #: 5-1 Line #: NA
Original Specific Comment #: 14

Comment: Although the figure contains contour lines, the corresponding elevations and contour intervals are not shown. In addition, the legend should indicate that the wetland areas shown are jurisdictional wetlands, if applicable. The figure should be revised to address these issues.

Response: Agree.

Action: The figure will be revised as stated in the comment.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: Figure 5 Page #: 5-4 Line #: NA
Original Specific Comment #: 15

Comment: The figure apparently lacks contour lines, elevations, and intervals. In addition, it is unclear if the wetland area depicted is the jurisdictional wetland identified earlier in the document. The figure should be revised to address these issues.

Response: Comment acknowledged. DOE has attempted to place contour lines on Figure 5, which has resulted in confusion to convey the original intent of the figure. The purpose of this figure is to depict the acreage of the watersheds and subbasins.

Action: Figure will be revised where possible to include contour lines, elevations, intervals, etc.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.2 Page #: 5-5 Line #: NA
Original Specific Comment #: 16

Comment: The text discusses mass loading and sampling parameter results associated with seven "storm events" over the course of 7 months (October through April 1995). As previously mentioned, although this information may be useful in addressing water quality issues associated with wetland creation or restoration, it is unnecessary for assessing the feasibility of wetland creation or restoration. In addition, information about seven "storm events" during 7 months, including the winter months, is inadequate to assess hydrologic factors associated with wetland creation or restoration viability. The text should be revised to address these issues.

Response: Comment acknowledged. Sampling during unsaturated and saturated conditions allows seasonal characterization of expected surface flows and resultant watershed storage capacity. This information will be utilized during wetland mitigation design.

Action: None required.

Commenting Organization: U.S. EPA Commentor: Saric
Section #: 5.2 Page #: 5-7 Line #: 1
Original Specific Comment #: 17

Comment: The text states that total runoff volumes were calculated for each sampling location shown in Table 1. It is unclear how the total runoff volumes were calculated. The text should be revised to address this issue.

Response: Agree.

Action: The text will be revised to indicate that runoff volumes were obtained from the flow meters at each sampling station, with the exception of Station 5, which was calculated as specified in the text.

Commenting Organization: U.S. EPA | Commentor: Saric
Section #: 5.2 | Page #: 5-8 | Line #: 1
Original Specific Comment #: 18

Comment: The text states that preliminary calculations indicate that 9.8 million gallons of water would be required to inundate 15 acres to a 2-foot depth. It is unclear how this number was calculated and why the 2-foot depth was selected. Also, as previously mentioned, a wetland need not be inundated to be considered a wetland. In addition, the text states that Alternative 3 is recommended for wetland mitigation based on accessibility, near-term implementation, and supporting watershed data. The assessment apparently does not provide information adequate enough to support this statement. Although accessibility is an important factor, it should not be considered a major factor in assessing wetland creation or restoration feasibility. Finally, it is unclear what is meant by "near-term implementation," because this term has not been previously discussed in the text. The text should be revised to address these issues.

Response: Comment acknowledged. This preliminary calculation was only conducted to allow a basic comparison of available surface water hydrology to required surface water hydrology. The 2-foot depth was just an assumption derived from a typical wetland depth of 1-3 feet. The calculation was based on the conversion of 231 in^3/gal. The text recognizes that this calculation does not necessarily account for the type of wetland ecosystem to be supported. The purpose of this calculation was to provide a level of certainty for obtaining 15 acres of mitigated wetlands per our regulatory commitment.

Near-term implementation is a term which is difficult to quantify within a complex arena of remedial activity schedules. For the purposes of this assessment, near-term implementation refers to those areas whose access is not restricted by other uses such as support facility construction or equipment laydown areas. However, all areas of the site considered for wetland mitigation must undergo soil certification (determination of a clean area as compared to soil final remediation levels) prior to implementation.

Action: None required.