Responses to USEPA's July 24, 2017 Questions & Statements
August 15, 2017

USEPA Question - *"...considering the common goal of expediting the RI/FS process, could the CPG submit the revised BERA before the December 2017 target for submitting the revised RI Report?"*

Response – Yes, given minimal changes in risk estimates in the next version per EPA-CPG discussions, CPG would be able to meet a November 2017 delivery for a revised Final 17-mile BERA. This is contingent upon the timely resolution by both USEPA and CPG of the Action Items generated during the July 24 17-mile BERA Meeting.

USEPA Statement – "It is unclear at this time whether EPA will be able to approve the bioaccumulation model for use in the FS without submitting it to peer review."

Response – Phase 1 of the Upper 9-mile Plan is contemplated to be an interim remedial action. As such, there is not a requirement to identify Proposed Remedial Goals as part of the Feasibility Study or decision-making process for this phase. Thus, bioaccumulation modeling would not be required in order to move forward with Phase 1. If there is an actual need for peer review, then the bioaccumulation model could be peer-reviewed during period between end of the RI/FS and the Phase 1 Remedial Design.

The LPRSA bioaccumulation model framework is based on the Gobas model which has been reviewed, approved and used by USEPA at other CERCLA sites. The CPG provided about 11 other sites that have used a Gobas-style model as Appendix A to our bioaccumulation model calibration report provided to USEPA. At USEPA's direction, the CPG has removed the carp gill ventilation factor which represented the only significant departure from the Gobas model framework. It is important that peer review also considers site-specific aspects of the LPRSA bioaccumulation model. These include assumptions about food web structure, spatial scale and exposure, and the choices of the parameters that govern uptake and loss mechanisms and species bioenergetics. USEPA has engaged external peer reviewers, including Dr. Robert Prezant and Mr. Jonathan Clough, who provided detailed direction that the CPG is addressing in its revision of the model.

USEPA Question - *"Does the proposed schedule allow time for CSTAG and NRRB review before the Proposed Plan is issued?"*

Response - Yes, the schedule assumes the CSTAG and NRRB reviews will be completed in the first quarter of 2019, with issuance of the ROD 1 Proposed Plan immediately thereafter. Achieving this schedule could be facilitated with the active and regular participation of USEPA's HQ NRRB and CSTAG representative(s) throughout the process of completing the 17-mile RI and the Upper 9-mile FS. This would lessen the learning curve and allow members of the CSTAG and NRRB to be familiar with the basis and development of ROD 1 for the Upper 9-mile Plan, thus accelerating the review process.

USEPA Request - *"...we request a written statement of the technical basis supporting the proposed RALs be provided to EPA in advance of the meeting proposed below."*

Response - The written statement supporting the technical basis for the RALs was provided to USEPA on August 8, 2017 via email.

USEPA Question - *"Does the CPG propose to evaluate capping and monitoring as part of one alternative, or incorporate capping and monitoring in more than one set of alternatives that also include targeted removal (dredging) upriver? Also, EPA would be interested to hear how CPG defines "actively remediate"."*

Response – The Upper 9-mile Plan proposes to evaluate a single alternative consisting primarily of dredging and capping within dredgeable areas located between RM 8.3 and RM 12.3 where surficial sediment concentrations are higher than the proposed RALs. The active and no further alternatives developed in the ROD 1 FS will assume the Lower 8-mile remedy is implemented. Dredging depths and preliminary cap design criteria will be evaluated as part of the ROD 1 FS. Other active technologies, such as ENR and/or in situ amendments, will be identified for limited areas exceeding RALs that are not suitable for dredging.

USEPA Question - *"On what basis will the River Mile 10.9 Removal be evaluated as a final action?"*

Response - The ROD 1 FS will evaluate whether the RM 10.9 removal is consistent with long-term actions and achievement of ROD 1 RAOs. The evaluation will include an assessment of the expected effectiveness of the cap in isolating residual contamination remaining beneath the cap based on cap composition and thickness and the physical and chemical performance monitoring data collected to date. It will be noted in the evaluation that, in accordance with the RM10.9 Long-Term Monitoring and Maintenance Plan, response actions will be implemented if performance monitoring indicates degradation of cap integrity beyond the limits specified in that plan.

No additional remedial action within the existing RM 10.9 removal action footprint is expected to be included in the FS for the ROD 1 remedy. However, areas adjacent to the RM 10.9 removal with concentrations higher than the ROD 1 RALs will be evaluated and are subject to action under ROD 1. Long-term RM 10.9 cap protectiveness will be assessed in conjunction with ROD 1 Performance Monitoring and in the evaluation of any subsequent actions that may be necessary in ROD 2.

USEPA Statement - *"It is EPA's understanding that projection runs will have been conducted as part of the remedial alternatives evaluation described in Section II.F .1. We would like to understand the purpose of the projections discussed in subsection D."*

Response – As part of the RI/FS, the CPG has worked with USEPA to develop an improved set of models for the entire LPRSA. The anticipated use of these models has been to examine relative differences among remedial options and not to make accurate predictions of future conditions for any one alternative. Such predictions are limited by uncertainties which can be greatly reduced through refinements possible with comprehensive baseline data, a detailed understanding of sediment COPC levels

from PDI investigations and delineation of the final remedial footprint. Model projections will be greatly improved by the data to be collected during remedial design that will provide a better understanding of boundary conditions, long-term sediment concentration trends (using new sediment data with the current data), water column contaminant concentrations along with estimates of erosion and deposition since the last bathymetric survey in 2012. These refined projections will provide the estimates of post-remedy trends that will be compared to post-remedy data to assess whether the remedy achieved the expected benefit. At this juncture focusing on the tangible and practical results of the Phase 1 Interim Remedial Action such as the risk reductions, sediment and surface water concentration reductions should be the primary criteria for the decision-making for Phase 1 of the Upper 9-mile Plan rather than model projections of tissue and sediment concentrations where the accuracy and uncertainty are not understood.

USEPA Statement - *"Consistent with EPA's adaptive management strategy, a monitoring approach would need to be included in the FS for ROD 1. Understanding the monitoring program that will be used to evaluate remedy performance, and identifying key indicators of remedy performance and criteria values that would trigger further action, all would be necessary to support the selection of an interim remedy."*

"As we have discussed previously, remedy performance will have to be evaluated based on sediment concentrations, in addition to tissue and surface water concentrations."

Response - An adaptive management and performance monitoring framework will be included as an appendix to the ROD 1 FS. The ROD 1 adaptive management plan, baseline monitoring plan, and long-term monitoring plan will be finalized during remedial design. The adaptive management plan will identify specific criteria and time frames that may trigger evaluation of further action.

Remedy performance will be evaluated relative to progress towards attaining the ROD 1 RAOs. Tissue and water column monitoring are proposed as the primary lines of evidence for evaluating remedy performance, as these metrics provide the most direct measures of progress toward achieving the RAOs. Sediment will also be monitored following construction and periodically thereafter to establish post-construction conditions and as a secondary indicator of recovery. Performance monitoring will be designed to define and evaluate temporal recovery trends and will also be compared to refined model projections to be developed during remedial design, as discussed above. If recovery is not progressing as anticipated, a diagnostic assessment will be performed to determine whether additional remedial actions are needed under ROD 2.