UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4 ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

March 2, 2021

Via Delivery as Email-attachment to Prashant.gupta@honeywell.com

Mr. Prashant K. Gupta
Honeywell
115 Tabor Road
Morris Plains, NJ 07950

Re: Comments on Initial (50%) Remedial Design
LCP Chemicals Georgia Superfund Site
Brunswick, Glynn County, GA

Dear Mr. Gupta:

The purpose of this letter is to provide comments on the January 2021 Initial (50%) Remedial Design for Operable Unit 1 (Marsh) of the LCP Chemicals Georgia Superfund Site in Brunswick, Georgia. Based on the comments, I think it might be helpful to schedule a meeting about the Long-Term Monitoring Plan prior to the next submittal.

If you have any questions or concerns, please contact me at (404)562-8935.

Sincerely,

Pamela J. Langston Scully, PE
Remedial Project Manager
Superfund Restoration and Construction Section

Enclosure

cc: J. McNamara, GAEPD

(50%) REMEDIAL DESIGN, BASIS OF DESIGN REPORT
LCP CHEMICALS SUPERFUND SITE, OPERABLE UNIT 1
BRUNSWICK, GEORGIA

General Comment:

1. Define acronyms the first time they are used.

Specific Comments:

2. **Section 1.1.2 Clean Up Levels**. This section should specify how the SWACs were calculated and should include a discussion of how attainment of the CULs will be documented.

3. **Section 1.1.5 Final Remedy Components.** Clarify that the volumes identified in this section are the volumes determined in the RD and may not match those in Section 1.1.1.

4. **Section 2.1.1: Pre-Design Investigations**. For clarity, the organization of this section should follow the structure of bulletized list in this section.

5. **Section 2.1.2.2 Upland Topographic Survey**. This section is aimed at both uplands and the marsh and the title should be changes to reflect the actual content.

6. **Sections 2.1.5.4 Elutriate Water Testing and 2.1.5.5 Solidification/Stabilization Treatment Evaluation.** These sections refer to results that are provided in the Treatability Study which is part of the PDI Evaluation Report. A summary of the results should be provided if the PDI Report is not part of the next Remedial Design Report.

7. **Section 2.1.3 Sediment Characterization**. It is impossible to see how a remedial design could be developed from the data presented on Figures 2-1 through 2-4. While the data no doubt exists, this section is of little use in this document without the presentation of more data. Note 3 in Figures 2-1 through 2-4 indicates that only data for the sample collected closest to the surface is presented. This is not the case as data from at least two depth intervals is presented.

8. **Section 2.2.1 Infrastructure**. Rather than verbally describe the different site features, a figure depicting the site and site infrastructure should be provided.

9. **Section 2.2.2 In-Water Structures.** Please confirm that this section is actually referring to the Turtle River and not the East River.

10. **Section 2.4.1 Biological Window**. Among other species, wood stork, manatees, and sea turtles are potentially present on-site. Biological work windows for these and other species should be considered as the remedial design is developed.

11. **Section 2.4.2 Tidal Windows**. This section states the tidal range is 7 to 10 feet with a semidiurnal cycle, but Section 1.1 indicates the tidal range is 7.2 feet.

12. **Section 2.5 Summary of Previous Remedial Actions**. Should include a figure depicting all the features and waterbodies described in this section.

13. **Section 2.5.3 Thin Cover Pilot Study.** Please clarify that the statement "marsh grasses within the Pilot Study area are recovering as anticipated, with general coverage percentages ranging from 50% to 75%" is referring to the 6-inch thick cap only. The Pilot Study results stated that the vegetative cover ranges from less than 5% to 75% of the assessed areas.

14. **Section 2.5.3 Thin Cover Pilot Study.** To the sentence that says, "Fiddler crab abundance is comparable to the baseline monitoring event" add "though the number of burrows per fiddler crab is approximately half of what it was during baseline conditions."

15. **Section 3.2.3 Summary and Table 3-2 Approximate Dredge Volumes**. Correct the Totals in the table.

16. **Section 3.2.1 Engineered Dredge Prisms**. A 6-inch overdredge allowance was included and reflected in the Table 3-2 Approximate Dredge Volumes. In Section 5.4 Sequencing and Placement Techniques, consolidation settlement considers the dredge cut thickness of 18 inches and the post-dredge backfill thickness of 12 inches. Is the consolidation settlement expected to be the same, minimal, with a dredge cut thickness of 24 inches (considering the overdredge thickness of 6-inches)? Are there effects to the channels having varied finish depths of backfill (varied elevation as a result of potential settlement)?

17. **Section 4 Dredging and 5 Backfilling.** Recommend development of strong plans to minimize sediment resuspension, contaminant redistribution and receptor exposure during sediment dredging and backfilling activities.

18. **Section 5 Backfilling and Section 6 Thin Layer Cover.** The physical and engineering characteristics of the backfill and this layer material was described in detail. It does not appear that ecological considerations were factored into the selection of these materials. Please justify the selection of material in light of the existing habitat loss.

19. **Section 6 Thin Layer Cover**. Provide detail regarding how the remedial SWAC goals will be determined and documented.

20. **Section 7 Site Restoration and Appendix G, Section 4.13 Site Restoration and Demobilization**. Additional detail regarding site restoration including anticipated timelines, monitoring planning and success criteria will need to be included in future iterations of the remedial design.

21. **Section 7.2.2 Upland**. This section indicates that the gravel used for the RSA and access roadways will be stockpile and tested for disposal or repurposed on site. What testing will be conducted on the gravel and at what frequency?

22. **Section 9.4 Long-Term Monitoring (LTM).** Many comments and questions were submitted by reviewers relative to the LTM. To ensure the 95% RD LTM section will not have substantial comments, please schedule a meeting with EPA and GAEPD to discuss. The comments/questions received are as follows:
    - LTM must collect sufficient data for all six of the remedial action objectives (RAOs) listed in the OU1 Record of Decision (ROD). The submitted LTM addresses only RAO 1 ("Prevent or minimize releases of constituents of concern ("COCs") in contaminated instream sediment from entering Purvis Creek"). Suggestions for the remaining RAOs are as follows:

A) Data/Analyses to Address RAO 2 (Reduce to acceptable levels, piscivorous bird and mammal population exposure to COCs from ingestion of prey exposed to contaminated sediment in the LCP Chemicals marsh, considering spatial forage areas of the wildlife and movement of forage prey.)
   a. As was proposed in the [ROD] (page 196), tissue samples of mummichog, grass shrimp, fiddler crab, and blue crab should be collected. Tissue should be monitored for the chemicals of concern (COCs) Mercury and Aroclor 1268. The number and location of samples should be the same as Table 8-2 of the 2012 Remedial Investigation Report Operable Unit One – Estuary [RI]3 and sampling frequency should be at 1-, 3-, and 5-years following remedy completion.
   b. The same food-chain models, surrogate predator receptors, and exposure parameters that were used in the 2012 Baseline Ecological Risk Assessment in the [RI] should be used in the LTM to determine whether possible exposure to COCs in piscivorous bird and mammal populations from the ingestion of mummichog, grass shrimp, fiddler crab, and blue crab has been reduced to acceptable levels.
B) Data/Analyses to Address RAO 3 (Prevent human exposure, through the ingestion of finfish and shellfish, to COCs above levels that pose unacceptable health risk to recreational and high quantity fish consumers.)
   a. The number of finfish and shellfish samples should be the same as Table 8-2 of the 2012 [RI] and sampling frequency should be at 1-, 3-, and 5-years following remedy completion.
   b. Sample results should be compared with EPA's established target concentrations (also referred to as Target Tissue Levels) listed on Table 19 of the [ROD] to determine whether RAO 3 has been addressed.
C) Data/Analyses to Address RAO 4 (Reduce risks to benthic organisms exposed to COC-contaminated sediment to levels that will result in self-sustaining benthic communities with diversity and structure comparable to that in appropriate reference areas.)
   a. Sediment results collected under the sediment sampling program should be compared with the sediment benthic community PRGs listed in Section 8.1.2 of the ROD. It is recommended that a DQO approach be taken to determine the number of sediment samples necessary; however, a minimum of 10 sediment cores is recommended at both the dredge and backfill areas and the thin cover areas. Sampling frequency should be at 1-, 3-, and 5-years following remedy completion.
   b. Following procedures/protocols cited in the Baseline Ecological Risk Assessment in the 2012 [RI] or referred to in the [ROD], comparisons of benthic invertebrate numerical abundance and diversity should be made between areas where remedial action was taken with appropriate reference areas. The 'Community assessments' recommendations made in Section 4.1 of EPA Region 4's Region 4 Ecological Risk Assessment Supplemental Guidance4 should also be considered. The frequency of these comparisons should be a minimum of every year after remedy completion.
D) Data/Analyses to Address RAO 5 (Reduce, to acceptable levels, finfish exposures to COCs from ingestion of prey and contaminated sediment in the LCP Chemicals marsh.)
   a. As was proposed in the ROD (page 196), tissue samples of mummichog, grass shrimp, fiddler crab, and blue crab should be collected. Tissue should be monitored for the COCs Mercury and Aroclor 1268. The number and location of samples should be the same as Table 8-2 of the 2012 [RI] and sampling frequency should be at 1-, 3-, and 5-years following remedy completion.

b. The same food-chain models, surrogate predator receptors, and exposure parameters that were used in the 2012 Baseline Ecological Risk Assessment of the [RI] should be used in the LTM to determine whether possible exposure to COCs in finfish from the ingestion of mummichog, grass shrimp, fiddler crab, and blue crabs has been reduced to acceptable levels.
c. Sediment results collected under the sediment sampling program should be compared with the sediment PRGs for Fish, Wildlife and Humans listed in Section 8.1.1 of the ROD. It is recommended that a DQO approach be taken to determine the number of sediment samples necessary; however, a minimum of 10 sediment cores is recommended at both the dredge and backfill areas and the thin cover areas. Sampling frequency should be at 1-, 3-, and 5-years following remedy completion.

E) Data/Analyses to Address RAO 6 (Restore surface water COC concentration to levels which are protective for recreational users, high quantity finfish consumers and ecological receptors.)
a. A minimum of 12 surface water samples at appropriate sampling locations (the same locations used in the [RI] is appropriate) should be collected according to the most current Surface Water Sampling protocol of EPA Region 4's Field Branches Quality System and Technical Procedures5. Both filtered (dissolved) and unfiltered (total) samples should be collected. Samples should be taken every 6 months following remedy completion to account for temporal variability.
b. To determine whether RAO 6 was addressed, surface water results should be compared with the State of Georgia water quality standards that were discussed in the Long-Term Monitoring Plan Framework located in Appendix A of the [ROD]. For Mercury and PCBs, unfiltered sample results should be compared with the applicable water quality standard. Since the Lead water quality standard is based on dissolved concentrations, it is appropriate to compare filtered sample results to the Lead water quality standard.

- Fish from several trophic levels need to be included as well as benthic organisms (preferably the same fish and benthic species as were used in the past monitoring).
- When conducting contaminant analyses from the sediment monitoring cores, use thinner segments from the cores (i.e., less than 6 inches) to determine if contaminants are migrating through the backfill/cap. The proposed six-inch increments will not be sufficient to make this assessment. In the 2020 thin-layer monitoring report, the following depth intervals were use: surface (~0 to 1 in), remaining surface to 3 in, 3 to 6 in, and 6 to the bottom of the cover material. Theses surface depth intervals are good, but more need to be added at the bottom interface.
- Consider porewater sampling with passive samplers and relate the concentrations in the porewater to fish tissue concentrations. The advantage of passive samplers is that they can be deployed in areas where the sediment remedies were conducted to measure the sediments directly instead of having fish alone as a measure.
- Section 1.1.5 Final Remedial Design references confirmation of dioxins/furans co-located with Aroclor 1268, but this group of analytes (dioxins/furans) are not included in the sediment monitoring plan. Will some samples be analyzed for dioxins/furans?
- Please provide more detail on how EPA/Honeywell will respond at the Site at the end of the initial monitoring program if the evaluation metrics have not been met, if considerable variability is observed in sample results or if sample results have not stabilized. For example, will EPA/Honeywell adopt an adaptive management approach during the monitoring program if substantial variability is observed in the sample results and increase sample numbers, or extend the monitoring timeframe prior to considering additional remedial activities?

- Additional Studies of the Long-Term Monitoring Plan should also include studies to evaluate remedy protectiveness for birds and success of RAO 2
- Is there a plan to minimize and monitor for the spread of invasive species?
- The following is a bulleted summary of potential long-term monitoring components. The table at the bottom of this list provides a preliminary estimate of monitoring frequencies.
  - Surface water testing (dissolved and total COCs)
  - Cap monitoring (confirmation of cap integrity through bathymetric surveys and visual observations, where feasible.
  - Benthic community assessment
    - Within the estuary and appropriate reference locations
    - Focus on IBI (Index of Biological Integrity) metrics, appropriate to the habitat
    - Include a reference envelope so that monitoring results are evaluated within the range of background conditions that exist in the estuary
  - Fish tissue collection
    - Long-term studies focusing on ~2 species, one at each of 2 trophic levels (e.g., bottom feeder and predator) within the LCP estuary, and consistent with EPA Guidance. Example species that may be considered include:
      - Striped mullet
      - Spotted seatrout (Hg)
      - Mummichog
      - Shellfish (PCBs)
    - If possible, identify species where there is overlap between HH and Eco concerns, and include a small home range for trend monitoring (e.g., mummichog).
    - Table of Monitoring Components and Monitoring Frequency

Component	Baseline (pre-remedy)	Years Post-Remedy Completion					
		1	3	5	10	15	20
Cap monitoring		Y	Y	Y			
Surface water chemistry		Y	Y	Y	TBD		
Fish/Shellfish tissue chemistry		Y	Y	Y	Y	Y	TBD
Benthic community assessment	Y			Y			

TBD = to be determined.

23. **Appendix A**. Add areas (in sf) and note if work is for PCBs or Hg for DMUs and CCUs in a table in Sheets C5 to C9 and C13 to C17.