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October 1, 2021

Ms. Ashley Howard  
1201 Elm Street, Suite 500  
Dallas, Texas 75270

**Request for Northern Impoundment Schedule Extension  
San Jacinto Waste Pits Superfund Site  
Channelview, Texas  
CERCLA Docket No. 06-02-18**

Dear Ms. Howard:

Pursuant to Paragraph 87 of the AOC and Section 6 of the Remedial Design Statement of Work (SOW), GHD Services Inc. (GHD), on behalf of International Paper Company (IP) and McGinnes Industrial Maintenance Corporation (MIMC; collectively referred to as the Respondents), requests that the United States Environmental Protection Agency (EPA) extend the deadline for submittal of the *Pre-Final 90% Remedial Design - Northern Impoundment* (Northern Impoundment 90% RD) for the San Jacinto River Waste Pits Superfund Site (Site). The Northern Impoundment 90% RD is currently due on January 17, 2022. The Respondents request a schedule extension of 160 days to June 26, 2022 to submit the Northern Impoundment 90% RD.

As discussed in the Technical Working Group (TWG) meeting held on August 30, 2021, this extension is necessary to allow for receipt, evaluation, and incorporation of the analytical, geotechnical, and supporting data from the Supplemental Design Investigation (SDI), into the Northern Impoundment 90% RD. The remaining components of the RD (Items a. through d. in Section 3 with an expected completion time of 30 weeks) cannot be initiated until all data from the SDI has been received and evaluated. Furthermore, a preliminary analysis has been completed of the SDI analytical and geotechnical data that has been received to date, and that analysis indicates that changes will be required in fundamental design assumptions (i.e., excavation depths, excavation horizontal limits, and alignment of the best management practice [BMP]) that were the basis of the remedial design at the time the current deadline was requested and approved. This includes major adjustments to the excavation contours and alignment of the BMP as it was proposed prior to the SDI. It also means that much of the engineering analysis performed previously, including work to develop the current BMP alignment and other work performed for purposes of the 30% remedial design package, is no longer usable and will need to be re-worked for purposes of the Northern Impoundment 90% RD. Based on the SDI data, the BMP will need to be realigned to move it further out from the boundaries of the Northern Impoundment. This new proposed alignment will trigger the need for input and approvals by the United States Army Corps of Engineers (USACE), Harris County Flood Control District (HCFCD), and the United States Coast Guard (USCG), among others.

In addition, the February 2021 Extension Request assumed that the Respondents would receive Coastal Water Authority (CWA) modeling data, which is needed to verify the design assumptions regarding the height of the wall, by July 1, 2021. The Respondents were also waiting on this data to update the hydrology and hydraulic (H-H) model with the most accurate river conditions, before completing Drainage Impact Analysis requested by the HCFCD. HCFCD's approval of the Drainage Impact Analysis also remains a key factor in allowing engineering work on the design to proceed. In addition, the extended discussions that have taken place at

TWG meetings and other settings regarding the collection of ambient turbidity data has delayed progress on the RD.

The events and developments that require an extension of the deadline are described below.

## 1. Development and Approval of the SDI Work Plan

On February 3, 2021, the Respondents submitted a request for an extension to the deadline for submission of the Northern Impoundment 90% RD from April 22, 2021, to January 17, 2022 (February 2021 Extension Request). This request was primarily based on the need to conduct additional analytical and geotechnical sampling to better delineate the extent of the impacted material for removal and to better understand geotechnical conditions to support the conceptual alignment and design of the BMP. At that time, the decision had been made to shift the BMP to a double wall system further offset from the impoundment and with shallower embedment depths than the single cantilever wall proposed in the Northern Impoundment 30% RD. Given the modified alignment and shallower embedment depths of the BMP, it was essential to collect additional geotechnical data to better understand the soil properties and thickness of the shallow stratigraphy in locations closer to the new BMP alignment. With the change in excavation methodology to focus on excavating the entire Northern Impoundment under dry conditions, there was also a need to evaluate the potential for hydraulic heave during the RA in the deeper excavation areas.

The proposed plan to collect this additional analytical and geotechnical data was presented in a TWG Meeting on February 4, 2021. The plan was then formalized in the *Supplemental Design Investigation Sampling Plan* (SDI Work Plan), submitted to the EPA on February 19, 2021. The February 2021 Extension Request was based on the SDI including only the scope of work included in the SDI Work Plan and assumed that the EPA would provide final approval of that work plan by the end of April 2021.

To expedite the approval process for the SDI Work Plan, a second TWG Meeting was held on March 10, 2021. Additional details of the SDI Work Plan were discussed during this TWG Meeting. On March 29, 2021, the EPA approved the February 2021 Extension Request. The same day, the EPA provided comments on the SDI Work Plan.

On April 15, 2021, the Respondents sent a draft Response to Comments (RTC) table and figures to the EPA that were then discussed in detail during another TWG Meeting on April 19, 2021. After further discussion with the EPA regarding the SDI scope of work, the Respondents submitted the *Supplemental Design Investigation Sampling Plan - Rev. 1* (Revised Work Plan) on May 21, 2021. The EPA approved the Revised Work Plan on June 4, 2021, five weeks beyond the approval date assumed in the February 2021 Extension Request.

In addition, between the February submittal of the SDI Work Plan and the June approval of the Revised Work Plan, the scope of the SDI event grew substantially. Most notably, seven analytical boring locations were added, with six of those additional borings being located in very challenging water-based locations. The original 10-week schedule for field work thus expanded to more than 12 weeks.

Neither the additional SDI scope of work (and the additional time it would take to complete) nor the extended EPA SDI Work Plan review and approval time period were accounted for in the previously submitted February 2021 Extension Request.

The Respondents recognized the impact of this delay and the need for a further extension of the deadline for submitting the 90% Northern Impoundment RD and in a letter to the EPA dated May 14, 2021, requested the schedule be revised to account for the change in scope and the extended approval process. In a May 21, 2021 response to that letter, the EPA said, “as stated in the prior extension approval letter, EPA will monitor the progression of the supplemental field work. After the uncertainties outlined in your letter have been resolved, the Respondents should be able to make a more comprehensive extension request, if necessary, including any

developments during the sampling effort, GHD can then submit an additional extension request for EPA's evaluation once the sampling data has been received and reviewed, and EPA will determine if it is appropriate."

## **2. SDI Fieldwork**

Following approval of the Revised Work Plan on June 4, 2021, GHD mobilized to the field and initiated the SDI fieldwork on June 28, 2021. All analytical drilling and the majority of the geotechnical evaluation were completed by August 26, 2021. Due to challenges encountered in the field and delays caused by Hurricane Nicholas making landfall near Houston on September 14, 2021, the water-based Cone Penetrating Test (CPT) drilling was not completed until September 16, 2021. In addition, due to the volume of analytical samples (over 350 samples), long turn-around time for dioxin/furan laboratory analysis, and the EPA requested sampling protocol, which triggered the analysis of held samples based upon results of adjacent samples (and therefore extended the time necessary to complete the analysis of samples), the Respondents received the last of the preliminary, unvalidated, data October 1, 2021. Final validated data is not expected any earlier than mid-October 2021.

## **3. Work Required to Complete the 90% Northern Impoundment RD**

The RD depends on defining the vertical and horizontal limits of the impacted material above the clean-up level requiring removal. A preliminary review of the unvalidated SDI data indicates that there will be significant changes to this vertical and horizontal delineation from what was assumed prior to the SDI. There are exceedances deeper than ever encountered in past investigations. For example, in four locations, results show impact in the 16 to 18 feet below ground surface [ft bgs] intervals and in two of those locations results show impact in the 20 to 22 ft bgs intervals (historically, the deepest impact had been no deeper than 18 ft bgs). Additionally, there are exceedances of the cleanup level in two boring locations along or outside the previously delineated horizontal limit of excavation on the east side of the Northern Impoundment. These findings (multiple locations with impacted material that is deeper than anticipated and expansion of the horizontal limits of excavation) will significantly affect the basis of design for the RD.

The increase in the horizontal and vertical limits of the excavation increase the volume of material that must be excavated and then managed for disposal, the sequencing of seasonal excavation (potentially adding another excavation season), and the expected volumes of contact water for storage and treatment. Perhaps most notably, the revised horizontal delineation will affect the alignment and assumptions for the design of the BMP itself. Based upon preliminary data, the BMP alignment will need to be moved east, beyond the extent of the Northern Impoundment boundary, a change that presents new challenges associated with encroachment into the navigational channel and potential impacts on River levels during high-water events that will need to be discussed with various stakeholders. In summary, the modified delineation means there is significant engineering and design work that needs to be completed for purposes of the 90% Southern Impoundment RD and that little of the prior design work can be utilized in developing the Northern Impoundment 90% RD.

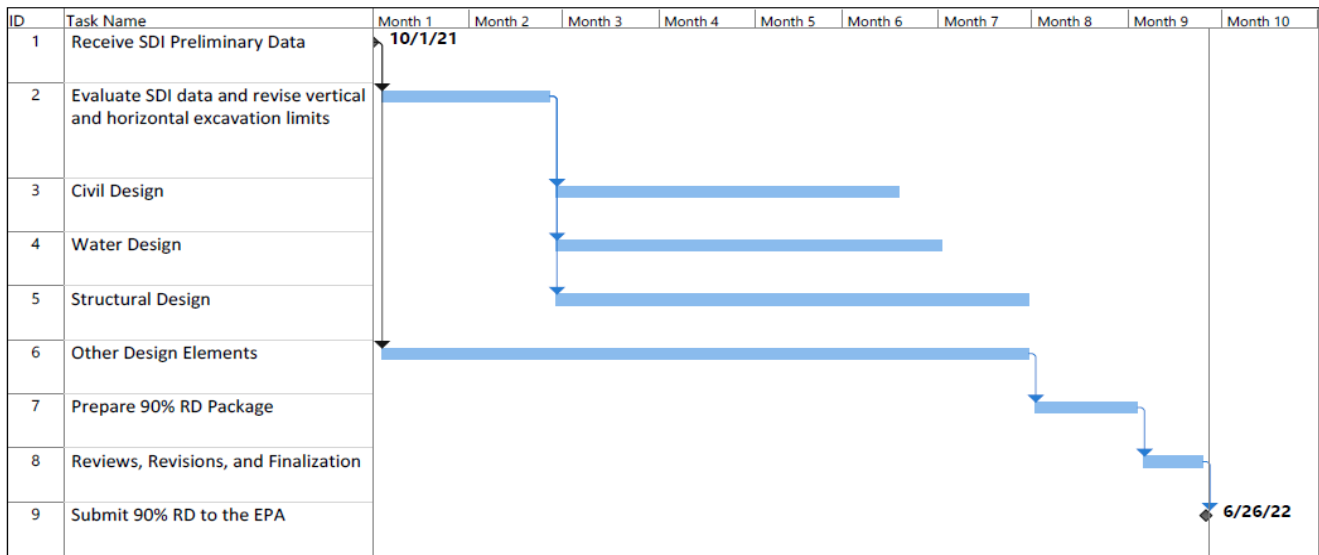
Even though preliminary analysis of data received to date has begun, the current January 17, 2022, deadline for the Northern Impoundment 90% RD does not leave enough time to analyze the data and then to complete the significant amount of engineering and detailed design required to prepare the 90% RD package, as further detailed below. It also does not allow sufficient time to address the other issues that have emerged related to the alignment of the BMP.

The necessary steps and anticipated timeline to complete the Northern Impoundment 90% RD are outlined below and summarized on a Gantt chart below:

1. Receipt of all preliminary SDI data - October 1, 2021.
2. Evaluate analytical and geotechnical SDI data and revise the necessary vertical and horizontal excavation limits - 8 weeks.
3. Design - 30 weeks:
  - a. Civil Design - 16 weeks:
    - i. Revise excavation volumes and calculate the likely low-water seasonal removal quantities and sequencing of the overall impoundment excavation to conform with the planned working season.
    - ii. Evaluate geotechnical data to identify areas where excavation depths could result in potential hydraulic heave or structural BMP instability.
    - iii. Revise civil drawings to incorporate updated vertical and horizontal delineation of excavation.
    - iv. Revise associated Site works drawings, including site roads, material staging and loadout areas, etc.
    - v. Revise design specifications.
    - vi. Checks and reviews of drawings and specifications performed by engineer of record.
  - b. Water Design - 18 week:
    - i. Evaluate SDI aquifer testing data to better understand the seepage rate of infiltration water into open excavations; adjust expected volumes of water for management.
    - ii. Based on the adjusted water volumes requiring management and the rate of generation, revise flows, storage capacity, and treatment system process.
    - iii. Revise water treatment system and water storage drawings.
    - iv. Complete mechanical design of piping and pumps and water treatment system layout.
    - v. Revise design specifications.
    - vi. Checks and reviews of drawings and specifications performed by engineer of record.
  - c. Structural - 22 weeks:
    - i. Revise BMP alignment based on revised horizontal and vertical excavation limits and geotechnical data evaluation.
    - ii. Perform detailed modeling and geostructural evaluation of the BMP and provide a revised geotechnical report.
    - iii. Perform detailed design of BMP and flow-through gate structures to allow river water to fill the impoundment area between excavation seasons.
    - iv. Revise structural drawings and details to account for the revised BMP alignment, sheet pile tip depths, and wall type (double wall).
    - v. Revise design specifications.
    - vi. Checks and reviews of drawings and specifications performed by engineer of record.
  - d. Other - 30 weeks (ongoing):
    - i. Collect ambient turbidity data and develop turbidity monitoring and controls plan for use during the BMP installation and removal.
    - ii. Collect velocity data to support the planned turbidity controls during BMP installation and removal.
    - iii. Further update and develop the existing H-H model and then perform Floodplain Drainage Impact Analysis required by the HCFCD to evaluate the impacts that the revised BMP alignment will have on the surrounding floodplain. Upon receipt of the CWA data, use the H-H model to

verify that the proposed wall height of the BMP is sufficient to prevent overtopping during the construction season.

- iv. Develop a plan for post-confirmation sampling (for inclusion in the Field Sampling Plan) to demonstrate that the remedial action objectives have been met.
  - v. Continue negotiations with adjacent landowners for long-term property access during the RA.
4. Prepare RD Package - Basis of Design document, Supplemental Plans, Drawings and Specifications, etc. - 5 weeks.
  5. Reviews, revisions, and finalization - 3 weeks.



Based upon this approximate schedule, after receipt of the preliminary SDI data, an additional 38 weeks will be necessary to complete the Northern Impoundment 90% RD. Based on a date of October 1, 2021 for receipt of all preliminary analytical data (and assuming the data validation process does not result in any significant changes to the data), the adjusted deadline would be June 26, 2022. Based on a projected completion date of June 26, 2022, the Respondents are requesting a 160-day extension to the current January 17, 2022 deadline.

## 4. Other Schedule Considerations

As detailed in the February 2021 Extension Request, the CWA is planning a modification to the Lake Houston control structure upstream of the Site, which will allow for a higher volume of water to be released. The Respondents and EPA have been in communication with the CWA to provide the modeling data for the selected alternative to better understand the downstream effects. The Respondents were hoping to have that data prior to completing the Drainage Impact Analysis on the floodplain surrounding the Site, as requested by the HCFCD; however, the CWA recently indicated that they are not prepared to share the data in a timely manner. The Respondents plan to move forward with the Drainage Impact Analysis without the CWA data, but the delayed initiation of the effort could impact the schedule if the analysis produces results that are problematic (i.e., if results show that the planned RA BMP alignment will have significant impacts on river elevations that could increase the flood risk in the surrounding community).

In addition, recent challenges encountered during the SDI with respect to use of turbidity curtains, detailed in the letter to the EPA submitted September 28, 2021, will need to be addressed in order to develop the Northern Impoundment 90% RD. To support the evaluation of turbidity control and monitoring options, the Respondents plan to deploy several turbidity monitors in the vicinity of the Northern Impoundment to collect ambient turbidity

data for an extended period of time. This seemingly minor topic has been the focus of three recent TWG Meetings (June 4, August 5, and August 30, 2021) and numerous other calls and internal discussions between the Respondents, GHD, and the EPA and the work plan to collect the data has yet to be approved. While this is not a critical path item for the RD, the prolonged discussions and resources devoted to this topic have slowed progress on those aspects of the RD that are not directly tied to receipt of the SDI data.

## 5. Staged Submittal of the 90% RD

While the bulk of the RD package must be developed in a step-wise fashion, with each design activity building upon the one before, some parts of the package can be completed concurrently. As requested by the EPA during the August 30, 2021, TWG Meeting, the Respondents have identified several elements of the design package that can be prepared and submitted to the EPA ahead of the extended June 2022 deadline, as summarized below. The Respondents reserve the right to further revise these deliverables, as needed, as the design progresses. Any EPA comments on these deliverables can then be addressed in the Final 100% Remedial Design.

Deliverable	Target Submittal Date
<b>Health and Safety Plan (HASP)</b> (Describes activities to be performed to protect Site personnel from potential hazards that could be encountered during RA activities).	January 2022
<b>Emergency Response Plan (ERP)</b> (Describes procedures for the prevention and response to major incidents that have the potential to occur during the RA).	January 2022
<b>Monitored Natural Recovery Plan (Operations &amp; Maintenance Plan)</b> (Describes the plan to implement Monitored Natural Recovery in the Sand Separation Area, as specified in the ROD).	February 2022
<b>Transportation and Off-Site Disposal Plan (TODP)</b> (Describes the procedures for on-Site management of excavated material to be disposed of off-Site, transportation routes for off-Site shipments, etc.).	March 2022
<b>Site-Wide Monitoring Plan (SWMP)</b> (Describes procedures for any ongoing monitoring necessary during the RA, including but not limited to, dust and particulate monitoring, stormwater control and monitoring, turbidity controls and monitoring, etc.).	April 2022
<b>Quality Assurance Project Plan (QAPP)</b> (Describes analytical methods and quality procedures for any laboratory analyses required during the RA).	May 2022
<b>Field Sampling Plan (FSP)</b> (Describes procedures for any required sample collection during the RA, including but not limited to, imported fill, treated water, post-confirmation sampling, etc.).	May 2022

## 6. Conclusion

In conclusion, and as detailed in the preceding sections, the process for review and approval of the Revised Work Plan and an increased scope of work has resulted in receipt of SDI data later than anticipated. Now that all preliminary data has been received, there is a significant amount of critical design work remaining to be completed on the Northern Impoundment 90% RD, including major adjustments to the excavation contours and BMP alignment. To properly complete this major design package, approximately 38 weeks are needed after the receipt of all SDI data on October 1, 2021.

Given these factors, the Respondents request a 160-day extension of the current due date for the Northern Impoundment 90% RD, (i.e., until June 26, 2022). To allow for a more expeditious review of this large design package, the Respondents would implement a staged submittal of certain design elements prior to the revised deadline.

Should you have any questions regarding this submittal, please contact the undersigned at (225) 292-9007 or Mr. Philip Slowiak of IP at (901) 419-3845 or Ms. Judy Armour of MIMC at (404) 915-8160.

Regards,

GHD



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