Outagamie County
RECYCLING & SOLID WASTE

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Mr. Brian M. Helminger
District Director
Heart of the Valley Metropolitan Sewerage District
801 Thilmany Road
Kaukauna, WI 54130

Dear Mr. Helminger:

Thank you for meeting virtually with the Outagamie County Recycling & Solid Waste Department (OCRSWD) on September 21st, 2021 to discuss the Foth Infrastructure & Environment, LLC (Foth) leachate options memorandum dated August 20, 2021. In order to summarize that meeting for both parties, OCRSWD has created a list of topics discussed with the support of our engineering firm Foth. We have provided additional detail on topic points that we think may be useful to provide more clarification and to further our continued discussions.

To start, we want to emphasize that OCRSWD has worked with Heart of the Valley Metropolitan Sewerage District (HOVMSD), along with the Village of Little Chute for many years to successfully transmit and treat leachate, and we are committed to continue to work with you on leachate management.

Please find below a summary of the topics discussed. We look forward to working together on this.

Sincerely,

Brian Van Straten

Brian Van Straten
Director, Recycling & Solid Waste

1. **Timeline Overview of NWLF in relationship to the Sewer Service Amendment** – OCRSWD presented the Northwest Landfill (NWLF) siting process as it relates to leachate acceptance and the subsequent modification of the Sewer Service Area (SSA) to allow leachate from the NWLF to be treated by the city of Appleton wastewater treatment plant (WWTP).

    - July 2016 – OCRSWD started the siting process with the Wisconsin Department of Natural Resources (WDNR) for the NWLF which consisted of an initial site inspection and subsequent approval, wetlands delineation, and completion of geo technical investigation.
    - September 2018 – OCRSWD received a concurrence letter from the city of Appleton for acceptance of NWLF leachate at the city of Appleton WWTP as required for Feasibility Report submittal to the WDNR. In September 2018, the initial NWLF Feasibility Report was submitted to WDNR.
    - October 2019 – The Feasibility Report was approved by the WDNR.
    - December 2019 – The OCRSWD applied to the East Central Wisconsin Regional Planning Commission (ECWRPC) to amend the SSA for the NWLF leachate to be transmitted to the city of Appleton WWTP along with establishing the correct SSA for the existing leachate discharge to the city of Appleton from the closed West Landfill that has been ongoing for many years.
    - September 2020 – A meeting was held and the ECWRPC Community Facilities Committee accepted the SSA boundary change. This decision was made after a series of meetings and correspondence regarding amending the SSA and the results of the Leachate Options Review outlining potential options for the NWLF leachate based on concerns the city of Appleton and HOVMSD have regarding ammonia and biochemical oxygen demand (BOD) strength for the new and ongoing leachate management at the landfill.
    - December 2020 – The WDNR reviewed and approved the SSA amendment.
    - April 2021 – The WDNR reviewed and approved the NWLF Plan of Operation that includes planned discharge of the NWLF leachate to the city of Appleton WWTP.

2. **Leachate Options Review Report and Update Memorandum (August 20, 2021)** – The Leachate Option Review Report (the "Report") from September 2020 and the updated memo from August 2021 were summarized and discussed.

    - Leachate Options Review – The Report was completed to evaluate whether the SSA boundary should be changed to direct the NWLF leachate to the city of Appleton WWTP or whether it should be directed to the village of Little Chute/HOVMSD. The options review examined worst case scenario leachate volumes and strengths for all landfills at the site and evaluated treatment options to manage the ammonia and BOD loads for all leachate streams. Based on this options comparison, the SSA boundary was adjusted to direct NWLF leachate to the city of Appleton WWTP separate from the existing Northeast Landfill (NELF) leachate discharge. The options highlighted the Xogen Technologies Electrolysis Reactor systems as potential ammonia and BOD treatment technologies that could be implemented by 2023 for the NELF discharge and 2026 for the NWLF discharge. The options review stated that the potential Xogen technology would need to be examined further through pilot or bench scale testing to verify leachate treatment capabilities. In addition, the

Report states that actual leachate quantity and quality data will need to be examined and projected to confirm and evaluate whether the options identified continue to be feasible moving forward.

- August 20, 2021 Memorandum Leachate Pre-treatment Pilot Study Update (the "August 20, 2021 Memo") – The August 20, 2021 Memo was provided as an update to the process and indicated that the Xogen Technology system was no longer considered an option for pre-treatment. The August 20, 2021 Memo reset the options being evaluated to include:
  - Option 1 – Continue NELF leachate disposal at HOVMSD and manage NELF leachate ammonia and BOD load under the current process.
  - Option 2 – Continue NELF leachate disposal at HOVMSD but provide for disposal of a portion of the NELF leachate at other WWTPs to manage ammonia and BOD loads.
  - Option 3 – Continue NELF leachate disposal at HOVMSD but provide for management of the leachate or portion of the leachate at a separate MBBR treatment system potentially being constructed as part of the NWLF project around 2026.

3. **Correspondence from Heart of the Valley Metropolitan Sewerage District ("HOVMSD") RE: August 20, 2021 Memorandum (received September 21, 2021)** – A memo correspondence was prepared by the HOVMSD (the "HOVMSD Memo") to provide a response to the updated leachate management options identified in the August 20, 2021 Memo. This HOVMSD Memo was presented and discussed.

   - The HOVMSD position on the NELF leachate remains unchanged based on the current ammonia and BOD loading, amount of capacity, and the operational complexities it causes.
   - The HOVMSD expected that a pre-treatment system would be installed on the NELF leachate discharge that will reduce the ammonia load by 70% and the BOD load by 50%.
   - The HOVMSD Memo does not comment on the updated options but it does state that the HOVMSD anticipates that any option or combination of options will meet the ammonia and BOD load reductions referenced above in the leachate discharged to HOVMSD.
   - The HOVMSD Memo attachments indicate the plant is averaging over 90% of the maximum allowed ammonia and BOD discharges and that the users continue to increase in the district communities.

4. **Xogen Technologies** – The attempts to work with the company Xogen Technologies to organize a bench scale/pilot testing have failed. It appears that the company may not be actively engaged in providing this technology or systems anymore. Foth has explored other options for chemical treatment but has not identified any replacement companies or equipment. The modular style and ability to possibly add or subtract units were the key features of the Xogen system.

5. **Local Limits/Treatment Standards for Ammonia/BOD** – The group discussed the method of implementing a treatment standard for ammonia and BOD. It was indicated that HOVMSD expects the NELF leachate discharge to have ammonia loads reduced by 70% and BOD loads reduced by 50%. This was based on the assumptions presented in the Leachate Options Review. However, this is a moving standard that will be difficult to implement in a discharge agreement. The idea of implementing district-wide local limits for ammonia and/or BOD was brought up. This process would take an extended period of time and HOVMSD pointed to the impact that the landfill leachate has on their system. Several things were noted:

    - Management of ammonia and BOD using the 70%/50% reduction from the landfill is the preferred method from HOVMSD perspective. How this would be calculated must be discussed to understand an actual limit to target.
    - Management of ammonia and BOD using local limits applied equally to all customers is how OCRSWD expects reductions should be achieved.
    - A concurrence letter was received from HOVMSD to accept and treat the leachate from the NELF. It is unclear what has changed since receipt of that concurrence letter. The specific volume and loading referenced in the NELF Plan of Operation permit and related documents should be examined to see how much it has increased from the original estimates.
    - What is the actual contribution of the landfill leachate to the overall ammonia and BOD loading at the HOVMSD plant? Some rough numbers were discussed but the overall contribution should be examined to understand how load changes will really affect the plant.

6. **NELF Leachate Volume and Loading** – The expected volume and ammonia/BOD loading from the NELF as it is capped and closed was reviewed and discussed.

    - Clarification was given that the NELF is reaching its final waste capacity and it will be closed and fully capped in the next five years. In 2020, a 14-acre final cover was installed and an additional 15-acre final cover is expected to be installed in 2023 with final capping by 2027.
    - The anticipated leachate volume and ammonia/BOD loading is expected to have peaked for the NELF. Over the next five years the volume and loads are anticipated to decline in line with the filling and closure of the landfill. This leachate generation curve is typical and is expected to be similar to the East Landfill and the nearby Winnebago County Sunnyview Landfill, which were both used as regional landfills.
    - As part of the leachate management options review, it was anticipated that the future projections of leachate volume and loads would need to be examined in detail to determine if it is feasible or necessary to install a pre-treatment system for the NELF.
    - OCRSWD is preparing a projection of leachate volumes and ammonia/BOD loads from the NELF based on the expected filling/closure schedule and compared with the previous landfill leachate generation curves. This presentation may demonstrate that the expected ammonia/BOD load will go down enough to show a 70%/50% reduction within a certain amount of time that alleviates the HOVMSD treatment plant concerns. This information will be shared as part of the continuing options

review and is currently being completed as part of the larger leachate management project that will be completed by the end of 2021.

7. **NELF Capital Investment Recovery** – The feasibility of installing a pre-treatment system specific to the NELF was discussed.

    - Because the NELF capacity has largely already been filled, it will be difficult to recover the capital investment associated with installing a leachate pre-treatment system at this time. The Brown, Outagamie, Winnebago (BOW) regional waste system includes a process for managing capital investments associated with each specific landfill. This includes the NELF where the capital recovery schedule has already been set on a per cubic yard (or ton) of capacity basis.
    - The NWLF pre-treatment system investment could be recovered through user fees applied through a capital recovery schedule for the entire NWLF capacity. This is one of the reasons that OCRSWD is looking at investing in a pre-treatment system associated with the NWLF and how it could be considered as a potential way of managing a portion of the leachate from the NELF if necessary in the future.

8. **1995 Leachate Disposal Agreement/Ordinances** – The 1995 leachate disposal agreement and a sewer use ordinance were referenced and discussed.

    - The 1995 leachate disposal agreement does reference pre-treatment. It states that the County is responsible for paying the costs of pre-treatment but it does not dictate how the County accomplished the pre-treatment.
    - Non-compliance with a Sewer Use Ordinance was brought up, but no particular reference was cited for an ordinance violation. The Sewer Use Ordinance referenced must be defined and understood so that any issues with compliance can be addressed.
    - The use of the village of Little Chute sanitary sewer was raised in the context that the leachate was damaging the sewer through corrosion. It was pointed out that OCRSWD is paying for leachate disposal and including a 25% surcharge that they expect will be used to maintain the systems appropriately.

9. **HOVMSD Plant Performance/Capacity** – There was review and discussion about the HOVMSD wastewater treatment plant performance, capacity, and users. The following questions were raised on this topic:

    - What is driving the push for ammonia/BOD pre-treatment/standards when the plant is complying with its limits for these parameters? HOVMSD indicated that compliance is being maintained but the treatment capacity is being reached and there is concern about continued growth in the community and how it can be managed facing the capacity limit. HOVMSD must serve the communities it is obligated to serve and so does OCRSWD.
    - There was discussion regarding a $15M upgrade to the HOVMSD plant and whether any part of the upgrade was being considered to address the ammonia/BOD treatment capacity limitation. What are the costs of these type of upgrades?

- Is the HOVMSD plant capacity and subsequent ammonia treatment capacity based on actual performance or is it based on the theoretical plant design? Is there an opportunity to conduct a re-rating study or other way of examining the capacity to address the limitations that HOVMSD is seeing? These are items for future discussion.