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September 8, 2023

Mr. Gregory E. Morris, P.E.
Manager - Solid Waste Unit
Bureau of Land, Division of Land Pollution Control, Permit Section
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62702

Subject: Zion Landfill Site 2 North Expansion Permit Application
Draft Denial Received April 6, 2023
Permit No. 1995-343-LFM, Log No. 2022-254

Dear Mr. Morris:

On behalf of Zion Landfill, Inc., Aptim Environmental & Infrastructure, LLC (APTIM) is submitting this response to the above referenced Draft Denial letter provided by the Illinois Environmental Protection Agency (IEPA) regarding the permit application to expand Zion Landfill.

IEPA Comment:

Pursuant to 35 Ill. Adm. Code 811.314(a)(3), the final protective layer must consist of soil material capable of supporting vegetation. Provide the anticipated root depth of the vegetation located on the final cover to verify that it is six (6) inches or less in depth.

Applicant Response:

35 Ill. Adm. Code 811.314 requires that the facility include a final cover consisting of a low permeability layer overlain by a final protective layer not less than three feet thick.

The low permeability components of the final cover system of the Zion Landfill North Expansion include a 40-mil linear low-density polyethylene (LLDPE) geomembrane which will be underlain by a 2-foot thick compacted cohesive soil layer with a maximum constructed permeability of 1 x 10-5 cm/sec. A double-sided geocomposite drainage net will overlay the geomembrane to drain infiltrated water away from the low-permeability layer. A protective soil cover layer will be placed over the geocomposite and will include a minimum of 2.5 feet of protective cover soil and six inches of vegetative cover soil.

As previously described, in response to a previous comment asking that we acknowledge that all three feet of the final protective layer soil will be capable of supporting vegetation, it was indicated that it is the Applicant's understanding that, while 35 Ill. Adm. Code 811.314 requires the final protective layer to not be less than three feet, it does not require that all three feet be capable of supporting vegetation. The Applicant's understanding is that the intent of this regulation is to ensure that the final cover is compatible with vegetative growth. Based on professional experience, the Applicant is confident that the proposed six inches of topsoil is adequate to maintain the type of vegetation that will be planted on the landfill final cover. Furthermore, as described in subsections (c)(2) and (c)(4) of the referenced 35 Ill. Adm. Code 811.314, the primary intention of the final protective layer is not only to support vegetation, but also to

minimize root penetration of the low permeability layer, and prevent desiccation, cracking, freezing, or other damage to the low permeability layer.

Nevertheless, while the lower 2.5 feet of the protective layer of the final cover does serve to minimize root penetration, it does not eliminate root penetration. Nearly all seeding mixtures used at landfills in Illinois have grass species with root systems that exceed six (6) inches in depth. However, the proposed protective layer consisting of a minimum of 2.5 feet of protective cover soil and six inches of vegetative cover soil has been permitted by the IEPA at numerous landfills across the State and including the existing Zion Landfill. Examples of other facilities where this design has been permitted include, but are not limited to, the following:

- Winnebago Landfill
- Orchard Hills Landfill
- Hickory Ridge Landfill
- Peoria City/County Landfill
- Indian Creek Landfill
- Clinton Landfill
- Effingham Crossroads Landfill
- Lee County Landfill
- Livingston Landfill

We are hopeful that the Illinois Environmental Protection Agency (IEPA) will find that this response is sufficient to address the Draft Denial Letter, and we look forward to the IEPA's continued review of the groundwater portions of the permit application. If you have any questions, please do not hesitate to contact me at (630) 762-3322.

Sincerely,
Aptim Environmental & Infrastructure, LLC

Martin N. Fallon
Project Manager