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Environmental Protection Agency
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Re: Revised Request for Approval of Use of Phosphogypsum in Small-scale Pilot Project

On March 31, 2022, Mosaic Fertilizer, LLC (“Mosaic”) submitted a Petition requesting approval under 40 C.F.R. §61.206 to remove phosphogypsum (“PG”) from a stack to perform a small-scale pilot road project with the University of Florida on land Mosaic owns.¹ The purpose of the project is to demonstrate the use of PG as an ingredient in road base as an approved alternative to the current regulatory requirement that PG must be disposed of in stacks.² That proposal contemplates six test sections each at 200 ft in length (1200 ft total). Three sections would contain PG and different mixtures of traditional road construction material (a graded aggregate mixed with limerock, a graded aggregate mixed with crushed concrete, and a cement-sand-PG stabilized base). Three control sections without PG also would be included for each base type. The Petition is currently undergoing agency review.

On June 30, 2023, Florida Governor DeSantis signed into law HB 1191 requiring the Florida Department of Transportation (“FDOT”) to study the use of PG in aggregate material used as road construction.³ As part of its study, FDOT has taken an interest in Mosaic's PG pilot road project. The Mosaic project team, led by Dr. Timothy Townsend, University of Florida, met with FDOT and received FDOT's input on the pilot design. FDOT provided recommendations on how the road sections should be constructed and evaluated to generate additional useful data. FDOT's recommendations included changes to the layout of the pilot project. FDOT requested that the planned 200 ft test sections be lengthened to 500 ft to increase the transition zone between test sections. FDOT also requested that Mosaic add one more test section, which would evaluate PG and reclaimed asphalt pavement (commonly called “RAP”)

Mosaic proposes to accommodate FDOT's requests by revising the pending Petition request as depicted in the revised site map⁴ to include the following:

- One additional design and control section to account for the PG – RAP blend aggregate mix; and

¹ See Request for Approval of Additional Uses of Phosphogypsum Pursuant to 40 C.F.R. §61.206 *Small-Scale Road Pilot Project on Private Land in Florida*, submitted by Mosaic Fertilizer, LLC, March 31, 2022.

² 40 C.F.R. § 61.206(a)-(c).

³ H.R. 1191, 125th Leg. Reg. Sess. (Fla. 2023).

⁴See Figure 1, pg. 2 of the Attachment.

- Increase the overall pilot road from 1200 ft to 3200 ft by:
 - Increasing pilot project test sections from 200 ft to 500 ft; and,
 - Increasing the control sections from 200 ft to 300 ft
- Expand soil, groundwater, and lysimeter monitoring for all sections as depicted in the updated map.
- Increase amount of PG removed from the stack for use in the pilot project from not to exceed 500 tons to approximately 1200 tons.

The result of these changes will be a more robust, useful data set and, as discussed below, will not pose additional risk.

Risk Assessment

The revised request does not change the underlying risk assessment. Risk assessments associated with Mosaic's 2022 and The Fertilizer Institute's 2019⁵ Petitions assumed a road length of one mile and use of not more than 500 tons of PG. The revised proposal, extending the total length of the pilot road to 3200 ft, adding an additional test section and increasing the total volume of PG used to approximately 1200 tons, is consistent with these assumptions and well within EPA's safe risk management level of 3 in 10,000.⁶ Mosaic's technical consultant has reviewed the revised proposal and concluded that the revised proposed Pilot Road, is of a size and scale that is a fraction of the road examined in detail in the 2019 TFI Petition and that any potential exposures, dose and risk will be substantially smaller than the exposures dose and risk estimated for the 2019 TFI petition. *See Attachment.* The 2019 TFI petition showed that the total risk would be well below EPA's accepted risk criteria.⁷

Pilot Road Petition Sections 9 and 10 Beneficial Use

Under Florida's H.R. 1191, FDOT will determine whether PG is suitable for use in road construction aggregate. If that determination is made, by law, PG would be exempt from state regulation as a solid waste and would no longer require FDEP approval under the beneficial use regulations as explained in Section 9 and 10 of Mosaic's March 31, 2022 Petition. Under that scenario, PG would be allowed to be used as road construction aggregate consistent with applicable federal and other state regulations. This does not change the proposed analysis and monitoring requirements that will be undertaken by Mosaic under the project plan developed with Dr. Townsend, University of Florida.

Please feel free to contact me at (813) 500-6957 with any questions.

Sincerely,



Patrick Kane, Vice President EHS, Enterprise Operations

⁵ Appendix 9, Mosaic March 31, 2022 Petition; Arcadis 2019. *Radiological Risk Assessment in Support of Petition for Beneficial Use of Phosphogypsum*, Report to The Fertilizer Institute, October.

⁶ EPA has determined that a 3 in 10,000 cancer risk level provided "an ample margin of safety, considering the cost, scientific uncertainty, and technological feasibility of control technologies needed to further reduce the radon emissions from [the PG] stacks." EPA PG Workbook, Applying to EPA for Approval of Other Uses of Phosphogypsum: Preparing and Submitting a Complete Petition under 40 CFR 61.206: A Workbook, at 13 (2005).

⁷ Letter from Douglas Chambers, Ph.D. Vice President, Senior Scientist Risk and Radioactivity Director, Technical Knowledge & Innovation, Radiation Services, Arcadis Canada, Inc., August 15, 2023.