E-DOCKET: EPA-HQ-OAR-2024-0446

REQUEST FOR APPROVAL OF USE OF PHOSPHOGYPSUM IN A SMALL-SCALE ROAD PILOT PROJECT ON PRIVATE LAND IN FLORIDA SUBMITTED BY MOSAIC FERTILIZER, LLC

RESPONSE TO COMMENTS

December 11, 2024

U. S. ENVIRONMENTAL PROTECTION AGENCY

Office of Radiation and Indoor Air

Radiation Protection Division

1200 Pennsylvania Ave., NW

Washington, DC 20460

Contents

Acronyms and Abbreviations:

Bq	becquerel
CAA	Clean Air Act
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
EPA	Environmental Protection Agency
MIR	Maximum Individual Risk
NAS	National Academy of Sciences
NESHAPs	National Emissions Standard for Hazardous Air Pollutants
ORIA	Office of Radiation and Indoor Air
pCi	picocurie
PG	Phosphogypsum
Ra-226	Radium-226
RCRA	Resource Conservation and Recovery Act
RME	Reasonable Maximum Exposure
TFI	The Fertilizer Institute

Background:

Mosaic Fertilizer, LLC submitted a request for a Small-scale Road Pilot Project on Private Land in Florida in March 2022, and submitted a Revised Request for Approval of Use of Phosphogypsum in Small-scale Pilot Project in August 2023. Mosaic has proposed to construct a small-scale pilot project at its New Wales facility in Polk County, Florida. Mosaic's plan is to construct four sections of test road having varying mixtures of phosphogypsum (PG) in the road base "to demonstrate the range of PG road construction designs that meet the Florida Standard Specifications for Road and Bridge construction" (Mosaic 2022a). The pilot project will be constructed in the place of an existing facility road near the phosphogypsum stack, and the study will be conducted in conjunction with researchers from the University of Florida. All information related to this approval is available at E-Docket EPA-HQ-OAR-2024-0446 and on EPA's public website at https://www.epa.gov/radiation/phosphogypsum.

The EPA performed a review of Mosaic's request, documented in *Review of the Small-scale Road Pilot Project on Private Land in Florida Submitted by Mosaic Fertilizer, LLC* (EPA 2024a). The Agency found that Mosaic's request is complete per the requirements of 40 CFR 61.206(b). Further, the review found that Mosaic's risk assessment is technically acceptable, and that the potential radiological risks from the proposed project meet the regulatory requirements of 40 CFR 61.206(c); that is, the project is at least as protective of public health as maintaining the phosphogypsum in a stack. On October 9, EPA issued a conditional approval of the small-scale pilot project per 40 CFR 61.206, pending a 30-day public comment period, later extended to 45 days. This comment period closed on November 23, 2024.

EPA committed to review all public comments for their relevance to the pending request and determine if they contained information that would lead to a concern for human health or environmental impacts not previously considered, and work with the applicant to resolve significant adverse comments. The EPA noted that comments must be specific to the small-scale pilot project as it is described in Mosaic's request and the EPA's pending approval. This document is the response to public comments received on the topic of this pending approval. The EPA's complete process of soliciting and addressing comments is described in Section 2.4 of *Applying to EPA for Approval of Other Uses of Phosphogypsum: Preparing and Submitting a Complete Petition Under 40 CFR 61.206, A Workbook* (EPA 2005).

Summary:

EPA received 91 discrete comments. One comment was in favor of conducting the pilot study, and the remaining 90 were opposed. Three of the comments opposing the project consisted of electronic petitions. Including signatories of these electronic petitions, EPA received a total of 22,112 comments.

The majority of comments (67 of 91) were generally opposed to the use of phosphogypsum in public roads and critical of the current state of phosphogypsum management. Many opposed the approval of Mosaic's pilot project on the basis that it would set a precedent or facilitate additional road uses. These comments were determined to be outside the scope of this decision, which is specific to the small-scale pilot project as it is described in Mosaic's request. The EPA's approval

applies only to the proposed pilot project and not to any broader use. Any other use would require a separate application, risk assessment, and approval.

Comments related to EPA's management of phosphogypsum and its non-radiological contaminants under the Resource Conservation and Recovery Act and other statutes similarly fall outside the scope of the current decision. EPA has documented other regulatory issues in its supporting documents, but EPA's determination here is specific to the permissibility of the project under the Clean Air Act National Emissions Standards for Hazardous Air Pollutants for Radionuclides under 40 CFR 61.206(c). It does not relate to any other regulatory approval or determination of compliance. These must be obtained or made separately from this decision.

Some commenters indicated that EPA established a legal ban on the use of phosphogypsum in road construction by considering it, and not issuing a categorical approval, in 1992. Road use is not prohibited by the regulation as amended in 1992 and is eligible to be considered as an "other use."

Commenters were critical of many aspects of the risk assessment. Commenters questioned the EPA's overall ability to perform radiological risk assessment, use of fatal radiogenic cancers as a health endpoint, selection of dose and risk coefficients, selection of models, and selection of exposure scenarios and whether current risk data was used. Specifically, several commenters believed that greater emphasis should be placed on the consideration of a future resident at the site of the pilot project. The topics raised in comments had been considered in EPA's technical evaluation. These comments represent disagreements with decisions that EPA has made in its evaluation of potential risks associated with the proposed pilot project, rather than new information that the Agency has not previously considered. The EPA believes that the risk assessments associated with this pilot project are appropriate for the project, consistent with current radiological risk assessment methodologies and precedent, and sufficient to evaluate the project per the requirements of 40 CFR 61.206. EPA believes that for this existing site, it is most appropriate to consider the potential risk to site workers and the nearest residents to the site when determining whether the pilot project is as protective as leaving the phosphogypsum in the stack. EPA's review is based upon multiple risk assessments that rely on different models and have been extensively reviewed. Results from multiple modeling efforts yield similar numerical results and show that potential risks due to the proposed pilot project are low.

Specific Issues:

Below, EPA has summarized public comments by topical area. For each topic, EPA has provided its response. Topics raised by individual comments are listed in the Appendix to this document.

Issue 1: Requests for Extension of the Public Comment Period

Many commenters requested extension of the comment period, noting the impacts of Hurricanes Helene and Milton on Florida.

EPA Response:

In response to these requests, the EPA extended the comment period for 15 days to account for interruptions due to the hurricane. Although the regulations do not require solicitation of public comment for this small-scale pilot project, the EPA has followed the public outreach procedures

specified in its guidance for other use requests (EPA 2005). Additionally, prior to its proposed decision and in response to public and media interest, the EPA published all application materials from Mosaic related to the pilot project on its public website. Mosaic's complete application materials have been publicly available since February 2024. For these reasons, the EPA believes that it has provided sufficient opportunity for public comment.

Issue 2: General Opposition to the Use of Phosphogypsum in Road Construction

A majority of the comments received expressed general opposition to the use of phosphogypsum in public roads, and many were concerned that this pilot study is a first step towards the widespread use of phosphogypsum in roads. Many commenters were critical of the current management of phosphogypsum, referring to vulnerability to natural disasters and to the possibility of sinkholes.

EPA Response:

These are policy concerns which fall outside the scope of the current decision. Under 40 CFR Part 61 Subpart R, the EPA may decide to grant a request for approval of distribution and/or use of phosphogypsum if it determines that "the proposed distribution and/or use is at leas[t] as protective of public health, in both the short term and the long term, as disposal of phosphogypsum in a stack or mine." 40 CFR 61.206(c). Here, the EPA's decision is limited to the proposed pilot project located on an existing industrial site. Radiological risk assessments specific to this project show that the proposed project is at least as protective of public health as disposal of phosphogypsum in a stack, which is the current practice at this site. (EPA 2024a)

Issue 3: Permissibility of Road Construction as an "Other Use"

Several comments stated that EPA previously prohibited the use of phosphogypsum in roads, and that this approval represents a reversal of that legal prohibition, in violation of the Clean Air Act and Administrative Procedure Act. One comment specifically stated that "Mosaic's application is not properly a request for an 'other purpose' of phosphogypsum within the meaning of 40 C.F.R. 61 Subpart R because EPA already determined road use presented an unreasonable risk to public health."

EPA Response:

This is not a correct characterization of the regulations, which make no mention of road use. The 1989 rules only allowed phosphogypsum to be disposed of in stacks, which was the prevailing practice at the time, to control its distribution. The EPA granted reconsideration of this portion of Subpart R and, in 1992, amended Subpart R to allow distribution and use of phosphogypsum for outdoor agricultural purposes, for indoor research and development, and for "other purposes," with prior approval by the EPA on a case-by-case basis. 57 FR at 23305.

The EPA used a dose assessment model to evaluate the incremental increases in the maximum individual lifetime risk (MIR) associated with uses of phosphogypsum in agriculture, road construction, and research and development activities. The EPA modeled risks from road construction to the construction worker, road user, resident near the road, and the "reclaimer" scenario, in which the road is abandoned and a future resident lives directly on the road base that contains phosphogypsum, with the pavement removed. (EPA 1992) In its 2020 approval of a request by The Fertilizer Institute (TFI), EPA stated the following:

"As initially promulgated, Subpart R required 'stacking' and did not authorize alternative uses of PG. In 1992, the EPA amended Subpart R to categorically authorize use of PG for agricultural or research and development purposes under certain circumstances and to establish a procedure to request approval of other uses of PG. See 57 Fed. Reg. 23305 (June 3, 1992). At that time, the EPA considered also categorically authorizing the use of PG in road construction, but the EPA decided not to do so because it concluded that 'the use of phosphogypsum in road construction presents an unacceptable level of risk to public health.' Id. That determination largely was based on a concern about the risks to people living in a house constructed on land where roads built using PG once existed. The EPA did not necessarily foreclose any or all use of PG in road construction, but simply declined, at that time, to categorically authorize - as for agricultural or research and development uses - use of PG in road construction." (EPA 2020)

Although the decision was ultimately withdrawn on the basis that TFI never submitted a specific, and therefore complete, application, the withdrawal stated that "This decision is without prejudice to a subsequent or further proper request under § 61.206 for approval of the use of phosphogypsum for other purposes that contains the information required by § 61.206(b)." 86 FR 35795, July 7, 2021. Although few uses have been proposed, and none have completed the approval process, individual road applications are eligible to be proposed and reviewed as other uses of phosphogypsum under Section 61.206 of the regulation.

Issue 4: Concerns Under Statutes Other than the Clean Air Act

Several commenters made general statements about the pilot project, road uses of phosphogypsum, or phosphogypsum management posing threats to water quality. Other commenters raised concerns related to the non-radiological constituents of phosphogypsum, and the treatment of phosphogypsum under the Resource Conservation and Recovery Act (RCRA).

EPA Response:

EPA summarized general issues related to the water pathway and phosphogypsum road use in Section VII of its review document (EPA 2024a). The pilot project will take place on an existing permitted facility, and "Mosaic will need to remain in compliance with the groundwater protection requirements of its wastewater permit with the state of Florida, in addition to the state's permitting requirements under the National Pollution Discharge Elimination System" (EPA 2024a, p 9). EPA has likewise documented RCRA and solid waste concerns in Sections V and VII, respectively, of its technical review (EPA 2024a). The current approval is based on a determination of whether the pilot project meets the requirements of 40 CFR 61.206. As stated in the approval letter, "This approval does not relieve Mosaic from responsibility to comply with all other federal, state, or local laws, regulations, or restrictions on the use of phosphogypsum." (EPA 2024b).

Several other topics were raised by a more limited number of commenters.

Issue 5: Criticism of EPA's Risk Threshold

One commenter stated that by basing its decision on the potential risk of fatal cancer, EPA ignores other effects of ionizing radiation. Other commenters criticized EPA's numerical risk threshold. Specifically, one commenter stated that to meet the regulatory requirement of being "at least as protective" of disposal in a mine or stack, other uses must have a risk of $9x10^{-5}$ or less, because this

was the greatest risk calculated for a stack at the time of EPA's rule. Other commenters stated that EPA's risk threshold of up to $3x10^{-4}$ is triple what is permissible under the Clean Air Act, and one commenter incorrectly attributed the source of EPA's risk threshold to its 2005 Workbook.

EPA Response:
EPA's consideration of risk is consistent with its previous actions related to the radionuclide NESHAPs and is similarly consistent with the Agency's overall risk management policies. Specifically, when the radionuclide NESHAPs were promulgated, EPA considered all health effects from radiation, including non-fatal cancers, hereditary effects, and developmental effects. (54 FR 51659) The EPA selected fatal cancer risk as a risk assessment metric. "The Administrator believes that a [maximum individual risk (MEI) of fatal cancer over a 70-year lifetime] of approximately 1 in 10 thousand should ordinarily be the upper end of the range of acceptability. As risks increase above this benchmark…they then would be weighed with the other health risk measures and information in making an overall judgement on acceptability. …These include the overall incidence of cancer or other serious health effects within the exposed population." (54 FR 51656)

EPA's definition of the presumptively safe level under the CAA, and its application to other uses of phosphogypsum, has been consistent since the 1992 revision to allow the consideration of other uses:

"…EPA has determined that the risks represented by uses of phosphogypsum in which the MIR does not exceed the presumptively safe level of approximately $1x10^{-4}$ are acceptable. In earlier radionuclide NESHAP rulemakings implementing the criteria in the Administrator's benzene decision, EPA determined that in some instances that emissions corresponding to estimated maximum individual lifetime risks as high as $3x10^{-4}$ were acceptable. In the case of phosphogypsum, considering all of the information available on potential exposures and the associated risks, as well as the uncertainties inherent in deriving risk estimates, EPA has concluded that certain uses of phosphogypsum may be considered acceptable so long as those uses are restricted to limit the estimated lifetime risk to any individual to no more than 3 in 10 thousand." 54 FR 23311 Wednesday, June 3, 1992.

In this case, risks posed by the proposed pilot project are less than 1% of this decision threshold. "Numerical estimates of the total lifetime risks indicate that the additional risk of fatal cancer to workers moving phosphogypsum and constructing the road will be less than 2×10^{-6} (2 in 1,000,000, or .0002%) and risk to the nearest members of the public from the project are lower than 1×10^{-6} (1 in 1,000,000, or .0001%) provided that the project is constructed as described in Mosaic's request." (EPA 2024a)

Issue 6: Criticism of EPA's Risk Models and Methodology
One commenter called into question radiological risk models used by the International Commission on Radiological Protection (ICRP) and the US regulatory community. The same commenter questioned the validity of the dose and risk models used in 1992 and suggested that forthcoming EPA guidance (Federal Guidance Report 16) should be used.

EPA Response:
The risk analysis submitted by Mosaic is based upon the generic risk assessment scenarios previously submitted by The Fertilizer Institute (TFI) in 2019 to support road construction projects that could vary

in location and design. EPA evaluated the current submission in the context of previous risk assessments, in particular those included in the background document "Potential Uses for Phosphogypsum and Associated Risks" (EPA 1992), and analyses performed on EPA's behalf to evaluate the TFI request (SC&A 2020). Dose and risk coefficients change with the state of research, and it is correct to note that risk assessments performed at different times use slightly different values.

The risk assessments used by Mosaic were developed for TFI and use a dose-to-risk conversion factor for fatal cancers of .05/Sievert (Arcadis 2019). This value is consistent with National Academy of Sciences (NAS) report Health Risks from Exposure to Low Levels of Ionizing Radiation, BEIR VII Phase 2 (NAS 2006), and EPA Radiogenic Cancer Risk Models and Projections for the U.S. Population, (EPA 2011). The current generation of EPA's Federal Guidance reports, which provide updated radionuclide-specific dose coefficients (including FGR 16, which is currently undergoing review by EPA's Science Advisory Board) are consistent with BEIR VII recommendations.

The 1992 risk assessment used dose and risk conversion factors specific to each radionuclide, given in Table 4-4 (EPA 1992). These factors were taken from a previous generation of EPA guidance and rely on older NAS recommendations. Despite differences in dosimetry, the results for these risk analyses agree closely with updated risk analysis (EPA 2024a, Appendix A). In its review of TFI's risk assessments, SC&A (2020) showed that the use of dose conversion factors taken from EPA's 2019 Federal Guidance Report 15 did not result in significant differences to the calculated risks. Considering that the total risks from the project are expected to be less than 1% of threshold for approval, uncertainty in dose and risk factors does not challenge the overall conclusions of the risk analysis.

Issue 7: Criticism of Risk Assessment Scenarios

Commenters were critical of the scenarios used to calculate risks from the pilot project. Some commenters asserted that EPA should have considered a longer duration of exposure for workers, and other exposure scenarios such as removing phosphogypsum from the stack, and performing maintenance activities on the pilot project road. Commenters also asserted that the decision should be based on possibility of a future resident on the site of the pilot project, also called the "reclaimer" scenario. One commenter, based on materials submitted by Mosaic, was concerned that EPA based this decision upon the Reasonably Maximal Exposure (RME) rather than the Maximum Individual Risk (MIR).

EPA Response:

EPA agrees that MIR is the appropriate basis for evaluating the risk due to other uses of phosphogypsum and believes that it has been correctly applied. MIR is defined as the fatal risk of cancer over a 70-year lifetime exposure (54 FR 51656). To develop the regulations, EPA evaluated the risks to existing populations based on their physical locations relative to sources. "In attempting to make these estimates, EPA has tried at all times to give 'best estimates' of radionuclide concentrations in the environment and individual and population risks… EPA has not estimated the maximum conceivable risks that may result from the facilities analyzed at some point in the future." (54 FR 51661)

EPA's technical review, *Review of the Small-scale Road Pilot Project on Private Land in Florida Submitted by Mosaic Fertilizer, LLC* section VI, considers total risks to site workers and nearby residents (EPA 2024a). EPA addresses the reclaimer scenario:

"The pilot project is proposed to be located on a large, privately-owned industrial site, on land which has been mined for phosphate ore and reclaimed. The pilot project site is located in the immediate proximity (.805 km) of an existing phosphogypsum stack. Should the site ever be developed for a different use, radiological risk due to the presence of phosphate ore, phosphogypsum, and other phosphate production residuals will have to be carefully considered, along with other risks inherent to any former industrial site. Removing the proposed quantity of phosphogypsum from the stack and using it in the proposed pilot project on the same site would not significantly change site characteristics or create additional risk to a future trespasser, reclaimer, or other member of the public." (EPA 2024a)

The risk assessments show that the total lifetime risks to workers, site users, and to the nearest residents are low. Based on the technical evaluations, the EPA has determined that for an existing industrial site with institutional controls, these individuals, and not a hypothetical reclaimer at some time in the future, best represent the MIR.

Issue 8: Model Selection
One commenter criticized the use of the RESRAD model to develop the risk estimates used by Mosaic and suggested that EPA should use the Superfund PRG calculator. The commenter also made a statement that RESRAD is not peer reviewed.

EPA Response:
No specific model is required by the regulation, and Section 5.2 of the Workbook indicates that model selection is the responsibility of the applicant. RESRAD is a code developed by Argonne National Laboratory. It is extensively used for radioactive site remediation, and verification and benchmarking peer review reports on RESRAD are readily available.

The EPA relied on several models to evaluate Mosaic's application to reach its technical conclusions. As noted by commenters, the risk analysis used by Mosaic, which had originally been developed for TFI, employed RESRAD. TFI's risk assessment results were independently reviewed by a contractor, including alternate model runs and hand calculations (SC&A 2020). EPA compared these results with risk assessments performed using the MICROSHIELD and PATHRAE models for the 1992 rule, and the risk results for similar exposure scenarios agree closely (EPA 2024a, Appendix A).

Issue 9: Radium Sampling
One commenter asserted that the information provided by Mosaic regarding the radium-226 concentrations in the phosphogypsum to be used did not comply with the sampling requirements of §61.207 and, therefore, the results were invalid and cannot be used. The same commenter objected to EPA's use of higher than expected concentrations of radium-226 in the risk assessment as a bounding calculation.

EPA Response:

The regulation does not set requirements for radium analysis for purposes of the application. 40 CFR 61.206(b)(6) requires "[t]he average concentration of radium-226 in the phosphogypsum to be used" for purposes of the request. Mosaic has included summary data for Ra-226 sampling in Mosaic 2022a, Appendix 12, *New Wales Stack Data*. EPA has determined that these sampling results, as reported, are adequate for the purposes of reviewing the small-scale pilot project. More refined sampling is not required for the application, because the risk assessment scenarios reviewed by EPA are based on Ra-226 activity concentration values that are roughly double the average value reported by Mosaic. EPA deliberately overestimated the concentration of Ra-226 so that the conclusions of the risk assessment will remain valid even if the Ra-226 activity in the phosphogypsum that is used turns out to be higher than the preliminary data submitted by Mosaic. When a project is approved, §61.206(d) requires that sampling that conforms with §61.207 must be performed on the actual phosphogypsum used for the project and repeated annually for the duration of phosphogypsum removal from the stack. (EPA 2024a)

Mosaic has reported a PG concentration that is consistent with central Florida ores, and which will be confirmed prior to the construction of the pilot project. Consistent with the regulation, EPA has conditioned its approval on receipt of radium-226 sampling that conforms to §61.207 prior to construction of the pilot project: "Sampling that conforms with §61.207 must be performed on the actual phosphogypsum used for the project prior to its removal from the stack. The results of sampling for radium-226, including raw analytical data, must be submitted to the EPA prior to the construction of test road base containing phosphogypsum." (EPA 2024b)
Selecting bounding values to address uncertainty within a risk assessment is common and accepted practice, and consistent with previous risk assessments:

"For these risk assessment scenarios, dose rates and risk may be scaled linearly based on the concentration of Ra-226 in the phosphogypsum used. The TFI risk assessment was based on an activity of 1 Bq/g (27 pCi/g), and Mosaic carried that assumption forward into its current request. EPA based its 2020 analyses on a Ra-226 concentration of 1.3 Bq/g (35 pCi/g), to be certain that the generic risk assessments would be inclusive of all domestic sources of phosphogypsum. In this document, the EPA also scaled each risk calculation to the higher concentration (i.e., 1.3 Bq/g) as the basis for the detailed discussion of each scenario. Mosaic's submission reports that the mean concentration of Ra-226 in samples taken from its New Wales stack is .56 Bq/g (15.1 pCi/g) (Mosaic 2022a, Attachment 12), which will be confirmed by detailed analyses required by §61.207 should the project be approved. Because the risk assessments assume higher Ra-226 concentrations than the phosphogypsum proposed for use in the small-scale pilot project, the risk assessments contained in this document likely overestimate the actual risks associated with this pilot project." (EPA 2024a)

Issue 10: Criticism of the Mosaic Study Design and Sample Handling
One commenter stated that the study design was not sufficient to comment on, and another stated that the objectives were not sufficiently defined for EPA to evaluate or approve the pilot project. Another commenter stated that unless EPA collects duplicate samples, then environmental sampling performed at the site cannot be considered reliable.

<u>EPA Response:</u>

The standard for this action is whether "the proposed distribution and/or use is at leas[t] as protective of public health, in both the short term and the long term," as disposal in a stack. 40 CFR 61.206(c). Based on the of the risk assessment, the EPA has determined that this pilot project would be at least as protective as disposal in a stack.

In its determination of completeness, the EPA found that Mosaic has sufficiently defined its overall goals for the pilot project, which include environmental study. (EPA 2024a) The stated purpose of the pilot project is that it will establish whether phosphogypsum road construction can meet performance requirements regulated by FDOT: "The purpose of the small-scale pilot is to demonstrate the range of PG road construction designs that meet the Florida Standard Specifications for Road and Bridge construction." (Mosaic 2022a, p. 4) Mosaic's initial environmental sampling and monitoring plans are described in Appendix 10 of its March 2022 request, *Proposed Monitoring Plan*. (Mosaic 2022a, p. 4). *Beneficial Use of Mosaic Phosphogypsum* (Townsend et al. 2024) contains detailed information on initial leachate modeling results and planned groundwater studies that address both radiological and non-radiological parameters and describes methodologies that are generally consistent with EPA's methods.

Environmental studies conducted as part of the pilot project are of interest to EPA because they may lead to more refined understanding of the environmental behavior of phosphogypsum. For this reason, EPA has conditioned its approval on receiving all data generated in the course of the project. This data, however, is not required to demonstrate the environmental safety of the pilot project itself. Documenting the quality of the data, including field and laboratory quality assurance practices commensurate with its intended use, is the responsibility of Mosaic.

Issue 11: Environmental Justice
Multiple commenters expressed concern that any risks from either the pilot project or future road use would be borne by disadvantaged communities.

EPA Response:
The EPA technical review determined that the Mosaic Fertilizer pilot project is at least as protective of public health as placement of phosphogypsum in a stack and that implementation of the pilot project would not expose surrounding residents to levels of ionizing radiation in excess of EPA's risk standards, regardless of their environmental justice status. In keeping with its own internal practices, the EPA performed screening to identify potential environmental justice concerns specific to this pilot project. Polk County, Florida where the Mosaic Fertilizer facility is located, in 2022 had a population of 736,000 people with a median age of 39.8 and a median household income of $60,901. According to census data, the five largest ethnic groups in Polk County, Florida are White (Non-Hispanic) (54.4%), Black or African American (Non-Hispanic) (14.4%), White (Hispanic) (10%), Other (Hispanic) (8.91%), and Two+ (Hispanic) (6.55%). Statistics for the three census tracts closest to the facility (tracts 148.02, 161, and 139.03) were comparable. The nearest resident is located more than three miles from an existing stack on the Mosaic Fertilizer facility, and 2.4 miles from the project site. EPA's public outreach was local, and bilingual. Neither EPA's screening efforts nor any public comment identified an environmental justice issue or community that is specific to this pilot project.

References

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EPA 2020b. Letter from Andrew Wheeler to Corey Rosenbusch. October 14, 2020.

EPA 2021. Withdrawal of Approval for Use of Phosphogypsum in Road Construction Federal Register Volume 86, No. 127, July 7, 2021, 35795.

EPA 2023. Letter from Jonathan Walsh to Patrick Kane. March 17, 2023.

EPA 2024a. U.S. Environmental Protection Agency. Review of the Small-scale Road Pilot Project on Private Land in Florida Submitted by Mosaic Fertilizer, LLC. E-Docket EPA-HQ-OAR-2024-0446. October 1, 2024.

EPA 2024b. Letter from Joseph Goffman to Patrick Kane Issuing pending approval of a small-scale pilot road project on Mosaic's property at its New Wales facility in Mulberry, Florida. EPA-HQ-OAR-2024-0446. October 1, 2024.

Mosaic 2024a. *Request for Approval of Use of Phosphogypsum in Small-scale Pilot Project; November 27, 2023, Meeting; Response to Questions*. February 7, 2024.

Mosaic 2024b. Updated map of pilot project.

Mosaic 2023. *Revised Request for Approval of Use of Phosphogypsum in Small-scale Pilot Project*. Letter from Pat Kane to Jonathan Walsh, August 23, 2023.

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Townsend, et al. 2024. Townsend, Timothy, Kate Weiksnar, Jordan Magnuson, Malik DeWindt. *Beneficial Use of Mosaic Phosphogypsum.* Prepared for Mosaic Fertilizer, LLC. University of Florida Engineering School of Sustainable Infrastructure and Environment. February 7, 2024.

I. Appendix: Contents of specific comments

Comments are listed below by Docket ID number. All comments are available via E Docket EPA-HQ-OAR-2024-0446, at https://www.regulations.gov/docket/EPA-HQ-OAR-2024-0446/comments

Numbered Issues:
Issue 1: Requests for Extension of the Public Comment Period
Issue 2: General Opposition to the Use of Phosphogypsum in Road Construction
Issue 3: Permissibility of road construction as an "other use"
Issue 4: Concerns under statutes other than the Clean Air Act
Issue 5: Criticism of EPA's risk threshold
Issue 6: Criticism of EPA's risk models and methodology
Issue 7: Criticism of risk assessment scenarios
Issue 8: Model selection
Issue 9: Radium sampling
Issue 10: Criticism of the Mosaic study design and sample handling
Issue 11: Environmental Justice

Docket ID No: EPA-HQ-OAR-2024-0446-0007
Received Oct 10, posted Oct 15, 2024
Elaine Trotter
Issues raised: 2, 11

Docket ID No: EPA-HQ-OAR-2024-0446-0008
Received October 16, posted October 17, 2024
JW Glass, Center for Biological Diversity
Issues raised: 1

Docket ID No: EPA-HQ-OAR-2024-0446-0009
Received Oct 18, posted October 23, 2024
American Indian Movement Florida Chapter
Issues raised: 2, 4

Docket ID No: EPA-HQ-OAR-2024-0446-0010
Received October 21, posted October 23, 2024
Lisa Evans, Earthjustice
Issues raised: 1

Docket ID No: EPA-HQ-OAR-2024-0446-0011
Received Oct 19, posted October 28, 2024
Sierra Club Loxahatchee
Issues raised: 1, 2

Docket ID No: EPA-HQ-OAR-2024-0446-0012
Received Nov 1, posted Nov 4, 2024
U.S. Rep. Maxwell Alejandro Frost
Issues raised: 1

Docket ID No: EPA-HQ-OAR-2024-0446-0013
Received October 23, posted Nov 5, 2024
Cynthia Diane Thorpe
Issues raised: 2

Docket ID No: EPA-HQ-OAR-2024-0446-0014
Received Nov 5, posted Nov 5, 2024
ManaSota-88, Inc.
Issues raised: 1, 2, 11

[Docket ID No: EPA-HQ-OAR-2024-0446-0015 – FR notice granting comment period extension]

Docket ID No: EPA-HQ-OAR-2024-0446-0016
November 13, 2024
Brooks Armstrong, People for Protecting Peace River
Issues raised: 2, 3, 7, 11

Docket ID No: EPA-HQ-OAR-2024-0446-0017
Received Nov 5, posted Nov 13, 2024
Robin Anderson
Issues raised: 2, 3, 6, 7, 10, 11

EPA-HQ-OAR-2024-0446-0018
Received November 7, posted November 13, 2024
Tami Thatcher
Issues raised: 2, 5, 6

EPA-HQ-OAR-2024-0446-0019
Nov 13, 2024
Brooke Gaebe
Issues raised: 2

EPA-HQ-OAR-2024-0446-0020
Nov 14, 2024
Mass comment campaign sponsored by Environmental Action with 11,121 signatories
Issues raised: 2

EPA-HQ-OAR-2024-0446-0021

Nov 14, 2024
Mass comment campaign sponsored by U.S. Public Interest Research Group with 10,549 signatories.
Issues raised: 2

EPA-HQ-OAR-2024-0446-0022
Submitted Nov 15, posted Nov 18, 2024
Barbara Angelucci
Issues raised: 2

EPA-HQ-OAR-2024-0446-0023
Submitted Nov 22, posted Nov 25, 2024
North America's Building Trades Unions
Issues raised: 3, 7, 10

EPA-HQ-OAR-2024-0446-0024
Submitted Nov 22, posted Nov 25, 2024
Surfrider Foundation
Issues raised: 2, 3, 5, 7, 10

EPA-HQ-OAR-2024-0446-0025
Submitted Nov 22, posted Nov 25, 2024
Centers for Biological Diversity et al., signed by 24 environmental organizations
Issues raised: 2, 3, 5, 11

EPA-HQ-OAR-2024-0446-0026
Submitted Nov 22, posted Nov 25, 2024
Office of U.S. Representative Maxwell Frost
Issues raised: 2, 4, 6, 7

EPA-HQ-OAR-2024-0446-0027
Submitted Nov 23, posted Nov 25, 2024
Carol Kio-Green
Issues raised: 2

EPA-HQ-OAR-2024-0446-0028
Submitted Nov 23, posted Nov 25, 2024
Center for Biological Diversity
Issues raised: 2, 3, 4, 5, 6, 7, 8 9

EPA-HQ-OAR-2024-0446-0029
Submitted Oct 15, posted Nov 25, 2024
Anonymous
Issues raised: 2

EPA-HQ-OAR-2024-0446-0030
Submitted Oct 18, posted Nov 25, 2024
Austin Tennant
Issues raised: 2

EPA-HQ-OAR-2024-0446-0031
Submitted Oct 15, posted Nov 25, 2024
Austin Tennant
Issues raised: 2

EPA-HQ-OAR-2024-0446-0032
Submitted Oct 18, posted Nov 25, 2024
David Savage
Issues raised: 2

EPA-HQ-OAR-2024-0446-0033
Submitted Oct 18, posted Nov 25, 2024
Christopher Provett
Issues raised: 2

EPA-HQ-OAR-2024-0446-0034
Submitted Oct 18, posted Nov 25, 2024
Tamy Allen
Issues raised: 2

EPA-HQ-OAR-2024-0446-0035
Submitted Oct 18, posted Nov 25, 2024
William Childers
Issues raised: 2

EPA-HQ-OAR-2024-0446-0036
Submitted Oct 19, posted Nov 25, 2024
Patrick Conroy
Issues raised: 2

EPA-HQ-OAR-2024-0446-0037
Submitted Oct 20, posted Nov 25, 2024
LA Murphy
Issues raised: 2

EPA-HQ-OAR-2024-0446-0038
Submitted Oct 21, posted Nov 25, 2024
Pamela Thompson

Issues raised: 2

EPA-HQ-OAR-2024-0446-0039
Submitted Oct 21, posted Nov 25, 2024
Hunter Sullivan
Issues raised: 2

EPA-HQ-OAR-2024-0446-0040
Submitted Oct 22, posted Nov 25, 2024
Anonymous
Issues raised: 2, 7

EPA-HQ-OAR-2024-0446-0041
Submitted Nov 1, posted Nov 25, 2024
Mary Hampton
Issues raised: 2

EPA-HQ-OAR-2024-0446-0042
Submitted Nov 2, posted Nov 25, 2024
Jane Armstrong
Issues raised: 2

EPA-HQ-OAR-2024-0446-0043
Submitted Nov 3, posted Nov 25, 2024
Robert Cusick
Issues raised: 2

EPA-HQ-OAR-2024-0446-0044
Submitted Nov 3, posted Nov 25, 2024
Ellie Hayes
Issues raised: 2

EPA-HQ-OAR-2024-0446-0045
Submitted Nov 3, posted Nov 25, 2024
Sharin Stone
Issues raised: 2

EPA-HQ-OAR-2024-0446-0046
Submitted Nov 8, posted Nov 25, 2024
Amelia Jones
Issues raised: 2

EPA-HQ-OAR-2024-0446-0047
Submitted Oct 15, posted Nov 25, 2024
Cynthia Thorpe
Issues raised: 2

EPA-HQ-OAR-2024-0446-0048
Submitted Oct 15, posted Nov 25, 2024
Frankl Darden
Issues raised: 2

EPA-HQ-OAR-2024-0446-0049
Submitted Oct 15, posted Nov 25, 2024
Anonymous
Issues raised: 2

EPA-HQ-OAR-2024-0446-0050
Submitted Oct 15, posted Nov 25, 2024
Lise Crossman
Issues raised: 2

EPA-HQ-OAR-2024-0446-0051
Submitted Oct 15, posted Nov 25, 2024
Don Horn
Issues raised: 2

EPA-HQ-OAR-2024-0446-0052
Submitted Oct 15, posted Nov 25, 2024
Amy Arensdorf
Issues raised: 2

EPA-HQ-OAR-2024-0446-0053
Submitted Oct 17, posted Nov 25, 2024
Michelle Jordan
Issues raised: 2

EPA-HQ-OAR-2024-0446-0054
Submitted Oct 17, posted Nov 25, 2024
Lisa Sciacca
Issues raised: 2

EPA-HQ-OAR-2024-0446-0055
Submitted Oct 18, posted Nov 25, 2024
Anonymous

Issues raised: 2

EPA-HQ-OAR-2024-0446-0056
Submitted Oct 18, posted Nov 25, 2024
Jessica Namath
Issues raised: 1, 2

EPA-HQ-OAR-2024-0446-0057
Submitted Oct 18, posted Nov 25, 2024
Mary Ellsworth
Issues raised: 2

EPA-HQ-OAR-2024-0446-0058
Submitted Oct 18, posted Nov 25, 2024
Kristine Timmes
Issues raised: 2

EPA-HQ-OAR-2024-0446-0059
Submitted Oct 18, posted Nov 25, 2024
Jason Ibarra
Issues raised: 2

EPA-HQ-OAR-2024-0446-0060
Submitted Oct 18, posted Nov 25, 2024
Garrett Stuart
Issues raised: 2

EPA-HQ-OAR-2024-0446-0061
Submitted Nov 7, posted Nov 25, 2024
Anonymous
Issues raised: 2

EPA-HQ-OAR-2024-0446-0062
Submitted Nov 7, posted Nov 25, 2024
Glen Gibellina
Issues raised: 2

EPA-HQ-OAR-2024-0446-0063
Submitted Oct 18, posted Nov 25, 2024
Derek Harris
Issues raised: Support for pilot project

EPA-HQ-OAR-2024-0446-0064
Submitted Oct 30, posted Nov 25, 2024
Karen A Wiley
Issues raised: 2

EPA-HQ-OAR-2024-0446-0065
Submitted Oct 30, posted Nov 25, 2024
Anonymous
Issues raised: 2

EPA-HQ-OAR-2024-0446-0066
Submitted Oct 30, posted Nov 25, 2024
Environmental Confederation of Southwest Florida
Issues raised: 2

EPA-HQ-OAR-2024-0446-0067
Submitted Oct 30, posted Nov 25, 2024
Elizabeth King
Issues raised: 2

EPA-HQ-OAR-2024-0446-0068
Submitted Oct 31, posted Nov 25, 2024
Margaret Klimek
Issues raised: 2

EPA-HQ-OAR-2024-0446-0069
Submitted Oct 31, posted Nov 25, 2024
David Morgan
Issues raised: 2

EPA-HQ-OAR-2024-0446-0070
Submitted Oct 31, posted Nov 25, 2024
Anonymous
Issues raised: 2

EPA-HQ-OAR-2024-0446-0071
Submitted Nov 1, posted Nov 25, 2024
Mary Lundeberg
Issues raised: 2

EPA-HQ-OAR-2024-0446-0072
Submitted Nov 6, posted Nov 25, 2024
Caleb Merendino

Issues raised: 2, 3

EPA-HQ-OAR-2024-0446-0073
Submitted Oct 25, posted Nov 26, 2024
Mary Morris
Issues raised: 2, 3

EPA-HQ-OAR-2024-0446-0074
Submitted Oct 25, posted Nov 26, 2024
Cecilia Davis-Taylor
Issues raised: 2

EPA-HQ-OAR-2024-0446-0075
Submitted Oct 25, posted Nov 26, 2024
Daniel Calvo
Issues raised: 2

EPA-HQ-OAR-2024-0446-0076
Submitted Oct 30, posted Nov 26, 2024
Henry Kuhlman
Issues raised: 2

EPA-HQ-OAR-2024-0446-0077
Submitted Oct 24, posted Nov 26, 2024
Peter Bart
Issues raised: 2

EPA-HQ-OAR-2024-0446-0078
Submitted Oct 25, posted Nov 26, 2024
Betty Osceola
Issues raised: 2

EPA-HQ-OAR-2024-0446-0079
Submitted Oct 25, posted Nov 26, 2024
Anonymous
Issues raised: 2

EPA-HQ-OAR-2024-0446-0080
Submitted Oct 25, posted Nov 26, 2024
Terra Butler
Issues raised: 2

EPA-HQ-OAR-2024-0446-0081
Submitted Oct 27, posted Nov 26, 2024
James Blankenship
Issues raised: 2, 7

EPA-HQ-OAR-2024-0446-0082
Submitted Oct 28, posted Nov 26, 2024
Jeanna Scott
Issues raised: 2

EPA-HQ-OAR-2024-0446-0083
Submitted Oct 28, posted Nov 26, 2024
Anonymous
Issues raised: 2

EPA-HQ-OAR-2024-0446-0084
Submitted Oct 29, posted Nov 26, 2024
Susan Renison
Issues raised: 2

EPA-HQ-OAR-2024-0446-0085
Submitted Oct 29, posted Nov 26, 2024
William Gebel
Issues raised: 2, 7

EPA-HQ-OAR-2024-0446-0086
Submitted Nov 3, posted Nov 26, 2024
William (Coty) Keller
Issues raised: 2

EPA-HQ-OAR-2024-0446-0087
Submitted Nov 5, posted Nov 26, 2024
Julie Brown
Issues raised: 2

EPA-HQ-OAR-2024-0446-0088
Submitted Nov 5, posted Nov 26, 2024
Randall Miller
Issues raised: 2

EPA-HQ-OAR-2024-0446-0089
Submitted Nov 5, posted Nov 26, 2024
Felicia Tencza
Issues raised: 2

EPA-HQ-OAR-2024-0446-0090
Submitted Nov 6, posted Nov 26, 2024
Pola Godsey
Issues raised: 2

EPA-HQ-OAR-2024-0446-0091
Submitted Nov 6, posted Nov 26, 2024
Leslie Harris
Issues raised: 2

EPA-HQ-OAR-2024-0446-0092
Submitted Nov 7, posted Nov 26, 2024
Cheryl Jozsa
Issues raised: 2

EPA-HQ-OAR-2024-0446-0093
Submitted Nov 7, posted Nov 26, 2024
Honey Rand
Issues raised: 2

EPA-HQ-OAR-2024-0446-0094
Submitted Nov 7, posted Nov 26, 2024
Christopher Lish
Issues raised: 2, 3

EPA-HQ-OAR-2024-0446-0095
Submitted Nov 7, posted Nov 26, 2024
Sarah Hollenhorst
Issues raised: 2

EPA-HQ-OAR-2024-0446-0096
Submitted Nov 7, posted Nov 26, 2024
Karina Oquendo
Issues raised: 2, 4

EPA-HQ-OAR-2024-0446-0097

Submitted Oct 15, posted Nov 26, 2024
Mary Pryor
Issues raised: 2

EPA-HQ-OAR-2024-0446-0098
Submitted Nov 3, posted Nov 26, 2024
Anonymous mass comment, 346 signatories
Issues raised: 2, 3

EPA-HQ-OAR-2024-0446-0099
Duplicate of EPA-HQ-OAR-2024-0446-0024