

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

AIR QUALITY DIVISION

**RESPONSIVENESS SUMMARY
TO
PUBLIC COMMENTS AND QUESTIONS**

**Energy Fuels Resources (USA) Inc. – Pinyon Plain Mine
Permit # 88788**

**Public Comment Period: June 18, 2021 to July 19, 2021
Public Hearing: July 19, 2021**

October 20, 2021

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List of Abbreviations

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
APP	Aquifer Protection Permit
A.R.S.	Arizona Revised Statutes
BLM	Bureau of Land Management
C.A.A.	Clean Air Act
CFR	Code of Federal Regulations
EFRI	Energy Fuels Resources (USA) Inc.
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EWS	Evaporative Water Spray System
NAAQS	National Ambient Air Quality Standards
PM	Particulate Matter
PM ₁₀	Particulate Matter Nominally less than 10 Micrometers
PM _{2.5}	Particulate Matter Nominally no larger than 2.5 Micrometers
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
SOPs	Standard Operating Procedures
TSD	Technical Support Document
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VER	Valid Existing Rights
VOC	Volatile Organic Compound

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I. BACKGROUND

This document contains Arizona Department of Environmental Quality's (ADEQ or "Department") responses to all comments received on proposed Air Quality Permit No. 88788 for Energy Fuels Resources (USA) Inc. (EFRI) located in Coconino County. Pinyon Plain Mine is an underground uranium mine located 6.5 miles southeast of Tusayan, AZ. ADEQ accepted comments on the Draft Permit and technical support document (TSD) from June 18, 2021 to July 19, 2021. The Department held a virtual public hearing on July 19, 2021 using GoToWebinar at 6:00 PM.

The Department received three written comments on the draft permit during the public comment period. Of the total submitted comments, the Department generated 49 responses. Table 2 below lists the commenter, any organization they may represent, the format of their comments, and the page numbers where those comments can be found.

The Department has grouped the comments into subject areas that focus on different aspects of the proposed draft permit. While the Department has made every effort to group the comments into subject areas, some comments may overlap multiple subject areas, therefore, ADEQ encourages the public to read the entire responsiveness summary. For some comments, the Department has included direct quotes of the comments extracted from the original letter. However, ADEQ has made the best effort to paraphrase or shorten many of the comments received to ensure clarity and conciseness. In some cases, the same or similar comments were submitted by multiple commenters. Instead of duplicating each of the comments and responses, ADEQ has listed the comment only once and identified the commenters who submitted the same or a very similar comment. The Department's response to each comment can be found directly below each comment.

II. ADEQ RECOMMENDATION

ADEQ recommends the issuance of Air Quality Permit No. 88788 to Energy Fuels Resources (USA) Inc for the construction and operation of its underground uranium mine located in Coconino County. The proposed air quality permit for the facility identifies the applicable rules from the Arizona Administrative Code (A.A.C.) and the Code of Federal Regulations (CFR) governing emissions from the facility and establishes practically enforceable limitations. The Department considered all comments received during the public comment period into the decision to issue the air quality permit. Any changes made to the air quality permit that occurred as a result of a comment received can be found in Section III below. The proposed permit also establishes appropriate compliance procedures, including requirements for soil sampling, gamma monitoring, recordkeeping, and reporting. EFRI will be required to carry out these procedures on an ongoing basis to demonstrate that Pinyon Plain Mine is operating within the limitations established by the air quality permit and that emissions are properly controlled.

The permit related documents can be found at the ADEQ website address:

<https://azdeq.gov/node/7323>

III. SIGNIFICANT CHANGES MADE TO THE AIR QUALITY PERMIT

The following section discusses any conditions in the air quality permit that were revised as a result of a comment received during the public comment period.

A. Condition III.B.1 of Attachment “D”

In the issued permit, this condition, which addresses the installation, calibration, maintenance, and operation of the anemometer has been updated to make the whole condition a material permit condition. This corrects an omission in the draft permit that was identified in Comment 42.

B. Appendix “1” of Attachment “D”

The map of the sampling locations in Appendix 1 of Attachment “D” has been updated to include two new gamma monitoring and sampling sites added by the facility.

IV. COMMENTS AND QUESTIONS

A. General Comments

Comment 1: The commenters are adamantly opposed to the operation of the site.
See Commenters: 1, 3

ADEQ Response:

The Department acknowledges the comments.

Comment 2: The commenter refers ADEQ’s responsibility to the Arizona Revised Statutes (A.R.S.) § 49-104 relating "to the powers and duties of the department and director, to ensure that it develops policies, plans, and programs ‘to protect the environment’ [A.R.S. § 49-104(A)(1)].” In addition to this, the commenter refers to Subsection B and that “no further degradation of the air in the State of Arizona by any industrial polluters shall be tolerated.”
See Commenter:3

ADEQ Response:

The Arizona Department of Environmental Quality’s (ADEQ) mission is to protect and enhance public health and the environment. To achieve this, the Air Quality Program administers the state’s environmental laws and delegated federal programs to prevent air pollution.

Arizona Revised Statutes 49-401.B declares the policy of the Arizona Legislature to be that no further degradation of the air shall be tolerated. This subsection goes on to say “A new industry hereinafter established shall not begin normal operation until it has secured a permit attesting that its operation will not cause pollution in excess of the standards set by the director of environmental quality.”

This language clarifies the intent of the Legislature to be that new industries are not precluded from operating in Arizona, but that they must first demonstrate to the Department that they will meet all applicable air quality environmental regulations. Through the initial air permitting process, EFRI was required to conduct an ambient air dispersion model and a visibility analysis following Environmental Protection Agency (EPA) approved protocols during the initial permitting to ensure that emissions from the mine would not cause or contribute to an exceedance of any ambient air quality standards or cause visibility degradation.

To address the public’s comments, the Department has updated the modeling analysis for PM₁₀ and performed an additional ambient impact analysis for PM_{2.5}. The modeled results are presented in Table 1 below.

**Table 1: Grand Canyon Cumulative Visibility Impact Modeling Results
New Flag Approach**

Pollutant	Averaging Period	Modeled Concentration (µg/m ³)	Background Concentration (µg/m ³)*	Total Cumulative Concentration (µg/m ³)	NAAQS (µg/m ³)
PM ₁₀	24-Hour	42	46	88	150
PM _{2.5}	24-Hour	6.6	12	18.6	35
	Annual	1.6	5.4	7.0	12

* The Department estimated the background concentrations based on the historical monitoring data collected from Flagstaff Middle School, which were conservative. The most recent monitoring data collected from Grand Canyon National Park show significantly lower background concentrations

Based on the modeling analysis results, the Department has determined that the issuance of the Air Quality Permit for Pinyon Plain Mine will not interfere with attainment and maintenance of the National Ambient Air Quality Standards (NAAQS).

Comment 3: The commenters state that ADEQ has a responsibility “to protect the environment” [A.R.S. § 49-104(A)(1)] and “to control present and future sources of emission of air contaminants to the end that air polluting activities of every type shall be regulated in a manner that insures the health, safety and general welfare of all the citizens of the state; protects property values and protects plant and animal life.”
See Commenter: 3

ADEQ Response:

The Department acknowledges the comments. Additional modeling was conducted in response to the expressed concern. The issuance of the Air Quality Permit for Pinyon Plain Mine will not interfere with attainment and maintenance of the NAAQS as demonstrated in Table 1 above.

- Comment 4: The commenter is concerned that the modeling does not adequately address the fugitive dust issues, and requests that the Department conduct new studies that take into consideration the changes in that have occurred at the site in the past 20 years, including “drought-induced plant mortality, off-road vehicle-caused soil degradation, grazing, and other factors”
See Commenter: 3

ADEQ Response:

State law requires the Department to issue permits if the applicant is able to demonstrate that they will comply with all current applicable air quality regulations. The Department is issuing this permit based on a thorough review of best available data. As part of the initial permitting process, the ADEQ required the applicant to conduct an ambient air dispersion model that considered the emissions from the mine (including fugitive dust emissions). This modeling analysis was verified by ADEQ and demonstrated that this facility is not expected to cause or contribute to a violation of any ambient air quality standard.

- Comment 5: Several commenters state that the Clean Air Act (C.A.A.) “provides that “any person may commence a civil action on his own behalf against any person ... who is alleged to have violated (if there is evidence that the alleged violation has been repeated) or to be in violation of an emission standard or limitation under this Act”. And thus “provides enforcement mechanisms that the Tribe [public] can use to commence civil action against EFRI in the event EFRI violates emission standards or limitations established by the CAA.”
See Commenters: 1, 3

ADEQ Response:

The Department acknowledges the comment.

- Comment 6: One commenter requests that the draft permit require that “EFRI routinely provide all its required sampling data to ADEQ and ADEQ must ensure that this data is readily accessible to the Tribe and the public.” Finally, one of the commenters requests that in addition, “that ADEQ implement this requirement setting a 7- or 14-day deadline for Energy Fuels to provide this information to ADEQ.”
See Commenters: 1, 3

ADEQ Response:

The facility is required to submit quarterly Gamma (Radiation) Monitoring reports and annual Soil Sampling reports (quarterly for the first calendar year, then annually if the trigger levels are not exceeded). The facility is required to submit the data for analysis to the lab within 7 calendar days of collection and then submit the lab results to the ADEQ

within 30 calendar days of the Permittee receiving the respective lab results.

The reports are public records and can be requested from the Records Center. In addition to this, the most recent annual soil reports can be found on the Department's webpage for Pinyon Plain Mine at <https://www.azdeq.gov/node/7323>.

- Comment 7: A commenter expressed concerns that the proposed emission limits and monitoring requirements for particulate matter less than 10 microns in diameter (PM₁₀), particulate matter less than 2.5 microns in diameter (PM_{2.5}) and fugitive dust are not adequate to protect human health.
See Commenter: 3

ADEQ Response:

The permit was written to represent the appropriate regulations allowed by state and federal law, and to maximize the environmental protections under both the Clean Air Act and the Arizona Administrative Code.

The permit includes monitoring conditions for particulate matter (PM) and opacity for the mine vents, the evaporative water spray system (EWS), and fugitive dust. Method 9 opacity observations are required bi-weekly (once every two weeks) for the mine vents and weekly for fugitive dust while the facility is in operation. The permit contains all applicable regulations to control fugitive emissions in two Sections, Fugitive Dust Requirements and the Dust Control Plan.

In addition, the ADEQ conducted additional modeling in response to the expressed concern. The issuance of the Air Quality Permit for Pinyon Plain Mine will not interfere with attainment and maintenance of the NAAQS as demonstrated in Table 1 above.

- Comment 8: The commenter expressed concerns that the emission calculations for the generator were not calculated for operation at less than 100% load, which could result in higher emissions from the unit.
See Commenter: 3

ADEQ Response:

The generator is EPA Tier 4i Certified, therefore the emission standards apply to the generator regardless of the load. In addition, the facility is required operate and maintain the generator "according to the manufacturer's written instructions, over the entire life of the engine". The facility is also required to "comply with the emission standards listed in 40 CFR 60.4202(a)(2) for all pollutants".

- Comment 9: The commenter expressed concerns with the chain of custody for the soil samples collection and the subsequent lab analysis.

See Commenter: 1

ADEQ Response:

The facility is required to conduct gamma monitoring and soil sampling in accordance with “Standard Operating Procedure for Environmental Gamma Monitoring” in Appendix 2 and “Standard Operating Procedure for Soil Sampling” in Appendix 3 respectively. The standard operating procedures (SOP) include the procedures and chain of custody requirements that the facility must comply with. These procedures ensure the integrity of the sample collection process and the sequence of steps that follow.

B. Impacts from Uranium Mining

Comment 10: The commenter requests that ADEQ consider studies in the Four Corners region which contain “information about harms from uranium mining that ADEQ should consider prior to the issuance of this permit.”

See Commenter: 3

ADEQ Response:

State law requires the Department to issue a permit if the applicant is able to demonstrate that they will comply with all applicable air quality regulations. The Department is issuing this permit based on a thorough review of best available data. As documented previously, results from the air quality dispersion modeling analysis supported the agency’s determination that the impacts from the facility’s operations will not adversely impact public health.

Comment 11: The commenter states that uranium mines are “often harder and costlier to clean up than anyone expected” citing a 2012 report issued by the U.S. Government Accountability Office. In addition, the commenter also states that “[r]ecent research has also shown that adequate technology does not exist to reclaim mines to the point that soil contamination approximates pre-mining background levels.”

See Commenter: 3

ADEQ Response:

State law requires the Department to issue permits if the applicant is able to demonstrate that they will comply with all applicable air quality regulations. The Department does not have the authority to consider reclamation costs during the air permitting process.

Comment 12: The commenter expressed concerns that the mining operations could contaminate water in the Supai Village.

See Commenters: 1

ADEQ Response:

The Department's responsibility is to protect human health and the environment. The Air Quality Permit contains applicable regulations pursuant to state and federal law to ensure that the air is safe to breathe. State law does not allow the Department to include consideration of non-air quality requirements when processing the air quality permit. However, the facility is required to meet any and all other applicable state and federal requirements for protecting these resources and properties.

Comment 13: The commenter was concerned that Pinyon Plain Mine lacks an approved Federal Plan of Operation, an Environmental Impact Statement (EIS) from the Bureau of Land Management (BLM), a determination of Valid Existing Rights (VER) from the BLM, formal consultations between the BLM and U.S. Fish and Wildlife Service pursuant to the Endangered Species Act, and formal consultation between the BLM and numerous Native American Tribes.

See Commenters: 2, 3

ADEQ Response:

ADEQ's Air Quality permitting processes are independent of the processes mentioned by the commenter. The Department does not rely upon this information in reviewing the permit applications, but instead evaluates the application submitted based on relevant air quality rules. The air permitting process included a thorough review of the air quality impacts from the facility.

Comment 14: Several commenters noted the presence of sites of religious, cultural, and historic significance in the area, including traditional cultural properties, such as Red Butte and the risks posed by the operation of the mine.

See Commenters: 1, 3

ADEQ Response:

The Department's responsibility is to protect human health and the environment. The Air Quality Permit will ensure that the air is safe to breathe. State law does not allow the Department to include non-air quality requirements in the processing of these permits; however, EFRI is required to meet any and all other applicable state and federal requirements for protecting these resources and properties.

C. Concerns About Grand Canyon National Park

Comment 15: The commenter states that it is ADEQ's duty to "preserve, protect, and enhance the air quality of national parks...and other areas of special national or regional natural, recreational, scenic, or historic value" in accordance with the Clean Air Act. The commenter requests that ADEQ's decision to grant the permit "is made only after 'careful evaluation of all the consequences of such a decision and after adequate procedural

opportunities for informed public participation in the decision-making process.”

See Commenter: 3

ADEQ Response:

The Department acknowledges that Grand Canyon National Park is a Class I area. The renewal permit was written to represent the appropriate regulations allowed by state and federal law, and to maximize the environmental protections under both the Clean Air Act and the Arizona Administrative Code.

During the initial permitting process, an ambient air impact analysis was conducted including dispersion modeling and a regional haze analysis. EFRI performed these analyses even though such analyses were not legally required for Class II sources at that point in time. These analyses demonstrated that Pinyon Plain Mine would not cause an exceedance of the NAAQS or cause visibility issues at Grand Canyon National Park.

The ADEQ accepted comments on the Draft Permit and technical support document (TSD) from June 18, 2021 to July 19, 2021. The Department also held a virtual public hearing on July 19, 2021 using GoToWebinar at 6:00 PM. Comments made during this public comment period were considered in the Department’s decision-making process.

Comment 16: Due to the close proximity of Pinyon Plain Mine to Grand Canyon National Park, the commenter expresses concern that “the draft permit does not explain (nor provide clear modeling) as to how the Class I National Ambient Air Quality Standards (“NAAQS”) maximum increases will be complied with”. In addition, the commenter requests that ADEQ “provide supporting evidence, data, and analysis to support its conclusions and show its work” to show how the permit will ensure compliance with the NAAQS.

See Commenter: 3

ADEQ Response:

The Department acknowledges that Grand Canyon National Park is a Class I area. This permit is a renewal of an existing permit, and therefore the issuance of this permit does not allow any degradation of air quality, nor consume Prevention of Significant Deterioration (PSD) increment. Secondly, because the Pinyon Plain Mine is a Class II (i.e. minor) source, PSD regulations do not apply.

Nevertheless, the Department has conducted modeling and found that the maximum impact from mining activities will be 42 $\mu\text{g}/\text{m}^3$ for PM_{10} , and 6.6 $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$ at the fenceline. The impact at the border of the Class I area (7.5 miles due north) will be less than 0.1 $\mu\text{g}/\text{m}^3$. This is well below the allowable PSD increment.

Comment 17: The commenter states “[b]ased on ADEQ’s 2011 ambient air analysis that the TSD states was conducted to demonstrate protection of the NAAQS, there is a strong likelihood that the mine is already causing or contributing to violations of the PM_{2.5} NAAQS, raising questions as to the efficacy of minor source permitting and underscoring the deficiencies of the draft permit’s proposed monitoring.” The commenter refers to the assumption made for the potential to emit calculations for the mine vent:

“If ADEQ assumes that all PM₁₀ from the vent shaft is PM_{2.5}, that would mean that the PM_{2.5} would be 124.1 µg/m³, just as it is for PM₁₀. Yet, the NAAQS set for PM_{2.5}, whether based the annual arithmetic mean concentration or the 98th percentile 24-hour concentration requires that PM_{2.5} must be less than or equal to either 15.0 µg/m³ or 65 µg/m³, respectively. ADEQ’s own figure for PM_{2.5} exceeds these pollution rates by an order of magnitude.”

See Commenter: 3

ADEQ Response:

The ADEQ implemented the PM₁₀ Surrogate Policy for the 2011 ambient air analysis. This policy was implemented by EPA and allowed the use of “PM₁₀ as a surrogate for PM_{2.5} in meeting new source review (NSR) requirements under the Clean Air Act (Act).”

Based on the Guideline on Speciated Particulate Monitoring, the particle size distribution for geological material is mostly coarse particles consisting of 50% PM₁₀ and 5 to 15% of PM_{2.5}. This results in PM_{2.5} being 30% of PM₁₀. The Department used 34% as a conservative value for the updated model. As can be seen in Table 1 above, the emissions from the vent shaft are not in violation of the NAAQS.

Comment 18: The commenter expresses concern that “[a]lthough the Pinyon Plain Mine (formerly known as the Canyon Mine) is outside Grand Canyon National Park’s (GCNP) boundaries, particulate matter from the mine can enter the park and poses a potential health concern for the many visitors who camp on National Forest Service roads near the mine and within GCNP.” The commenter also expresses concern about “the potential effects on wildlife and vegetation from airborne particulate matter from the mine.”

See Commenters: 2

ADEQ Response:

The Department acknowledges the facility’s proximity to GCNP. The renewal permit was written to represent the appropriate regulations allowed by state and federal law, and to maximize the environmental protections under both the Clean Air Act and the Arizona Administrative Code.

The Department has updated the modeling analysis for PM₁₀ and performed an additional ambient impact analysis for PM_{2.5}. The modeled results are presented in Table 1 above. The updated ambient air impact analysis conducted by the Department demonstrates that the facility's emissions will not interfere with attainment and maintenance of the NAAQS. In addition, the model demonstrated that the highest modeled concentrations occurred at the fence line and the modeled concentration declined sharply further away from the site.

D. Concerns About the Evaporative Water Spray Systems (EWS)

Comment 19: The commenters express concern about the evaporative water system (EWS) and the sprayer mist being carried outside of the facility boundary by the wind. One commenter expresses concern about the EWS operating during high wind days.

See Commenters: 1, 2, 3

ADEQ Response:

The Department conducted an updated model for the EWS using droplet size distribution data from the manufacturer, the wind data collected from the GCNP Airport, and a conservative total dissolved solids (TDS) content for the evaporation pond. The APEX 2.0 evaporator fans are designed to mitigate environmental contamination by controlling the dry aerosol drift since the largest droplets will quickly fall out of the air and back into the pond. The Department estimated the emission rates based on six wind speed categories as specified in EPA's AERMOD dispersion model. Based on the results of the updated model, the EWS will not interfere with attainment and maintenance of the NAAQS.

Comment 20: The commenter, referring to the EWS, requests ADEQ to "require wind speed monitoring and equipment maintenance for such monitoring and reporting to ADEQ, and that the permit imposes a cap for persistent and wind gust speeds that, if met, requires immediate cessation of the operation of the evaporative system."

See Commenter: 3

ADEQ Response:

The Department conducted an updated model for the EWS using 5 years of meteorological data (2016-2020) collected at the Grand Canyon National Park Airport. The updated model demonstrated that the EWS will not interfere with attainment and maintenance of the NAAQS under the operational limits/conditions as proposed in the permit.

However, the Department added a gamma monitoring and soil sampling location in front of the evaporation pond to address the expressed concern. This additional monitoring location will capture any potential contamination from the EWS.

Comment 21: The commenters express concern about “the generation of heavy metal-rich particulate matter from the evaporation fans” and the water from the sprayers leading to contamination of the soil and high radiation levels around the mine site. In addition, one commenter states that “[t]he permit also needs to require that Energy Fuels monitor and report incidences of when and where drift occurs as it necessarily has implications on the surrounding soil, and thus, dust impacts that ADEQ has authority to regulate.”

See Commenters: 2, 3

ADEQ Response:

The air quality permit requires EFRI to conduct soil sampling and gamma radiation monitoring around the mine. ADEQ believes the monitoring locations (six gamma radiation, six soil sampling) around the site is sufficient to capture the maximum impacts from the mine. Locations further away from the site are expected to have impacts less than those quantified at the monitoring locations.

Comment 22: The commenter expressed concern that “the concentration of uranium and other heavy metals is likely to continue to increase in the impoundment pond as more contaminated water is added to the pond and pure water is evaporated.”

The commenter requests that monitoring be added to the permit “either by estimation or direct analysis of the particles emitted from the evaporator fans, and include appropriate mitigation measures to reduce this contaminant based on best practices and industry standards.”

See Commenters: 2

ADEQ Response:

The Department acknowledges the comment. The APEX 2.0 evaporators are designed to mitigate environmental contamination by controlling the dry aerosol drift. This air quality permit does not regulate nor enforce any requirements for water quality. The facility is in the process of obtaining an Aquifer Protection Permit (APP) which contains requirements to sample the water in the impoundment pond.

The Department re-examined the emissions estimates for EWS using the manufacturer’s droplet size distribution data, the wind data collected from GCNP Airport, and a conservative total dissolved solids (TDS) content of 10,000 ppmv in the evaporation pond. Because emission rates increase as wind speed increases, the Department estimated the emission rates based on six wind speed categories as specified in EPA’s AERMOD dispersion model. Based on the results of the updated model, the EWS will not interfere with attainment and maintenance of the NAAQS.

Comment 23: The commenter states that the EWS emissions could reasonably be considered non-fugitive emissions based on the definition of fugitive emissions under A.A.C. R18-2-101.59.

See Commenter: 2

ADEQ Response:

The Department acknowledges the commenter's request. The potential to emit (PTE) calculations have been updated to reflect the emissions of the EWS.

E. Fine Particulate (PM_{2.5}) Monitoring and Mitigation

Comment 24: The commenter requests that ADEQ "clarify what it means when the Draft Permit and TSD state "PM" so there is no question as to whether it is referring to both of these criteria pollutants" referring to PM₁₀ and PM_{2.5}.

See Commenter: 3

ADEQ Response:

The Department acknowledges this comment. The draft permit and TSD have been updated to clarify whether PM₁₀ or PM_{2.5} are being referred to individually.

Comment 25: The commenter states concern that there "are problems with the draft permit's proposed monitoring for PM_{2.5}, PM₁₀, fugitive dust, and volatile organic compounds ("VOCs")" because "[t]he draft permit arguably ties PM monitoring to when the mine ventilation is operating." In addition, the commenter states that the "permit appears to arbitrarily narrow PM_{2.5} and PM₁₀ monitoring to mine ventilation operations despite PM_{2.5} and PM₁₀ pollution not being constrained to these operations."

See Commenter: 3

ADEQ Response:

The permit is written to include all applicable monitoring requirements from Federal and State law for the facility. The Permittee is required to demonstrate compliance with the mine shaft monitoring conditions for PM₁₀ and PM_{2.5} while the mine shaft is in operation. The Permittee is required to demonstrate compliance with all permit conditions while the facility is in operation.

Comment 26: The commenter asked how the facility will demonstrate compliance with the opacity limits in the air quality permit given that there are non-point sources of emissions.

See Commenter: 3

ADEQ Response:

The facility is required to have a person certified in EPA Reference Method 9 on site or on call to monitor visible emissions by Condition I.A.1 of Attachment “B”. The Method 9 Certification process includes training for monitoring fugitive emissions. Visible emissions standards are accepted and widely used for controlling fugitive emissions from non-point sources.

- Comment 27: The commenter expressed concerns that monitoring the opacity of visible emissions does not consider the what pollutants are contained in the plume. The commenter also stated that additional monitoring should occur for the pollutants contained in the visible emissions.

See Commenters: 3

ADEQ Response:

The state and federal rules contain applicable opacity standards, however there are no methods for determining the contents of the dust.

- Comment 28: The commenter suggested that the Department should monitor for fine dust particles smaller than 2.5 microns (PM_{2.5}) in tailings piles, truck loading areas, and roadways. The commenter expressed that uranium dust is of particular concern because of the radioactive nature of the material.

See Commenter: 3

ADEQ Response:

The majority of particulate emissions from facility will be from fugitive dust from material handling and haul truck travel. These types of emissions are generally larger than 2.5 microns. The Department agrees that fine particulate matter presents a health concern, however due to the conditions mentioned, PM_{2.5} is not a pollutant of significant concern at these facilities.

The Department includes the necessary and applicable conditions to reduce emissions. The permit requires EFRI to ensure that all haul trucks be securely covered from all sides. This will prevent dust from escaping from the truck and will prevent contamination from occurring. In addition, the permit requires EFRI to conduct soil sampling around the mine and test for uranium ore dust.

- Comment 29: The commenter requests that “ADEQ work with the United States Geological Survey (USGS) to develop and employ a monitoring and sampling program and dust control plan that will ensure preemptive detection of contamination and abatement as well as sufficiently monitor and prevent further on-site and off- site migration of contaminants.”

See Commenter: 3

ADEQ Response:

The renewal permit was written to represent the appropriate regulations allowed by state and federal law. The Department is issuing this permit based on a thorough review of best available data. The monitoring and sampling locations were determined to be adequate based on a review of the meteorological conditions at the site.

Comment 30: The commenter asked why volatile organic compound (VOC) emissions from the mine shaft were not considered in the air permit and requests that ADEQ explain why these emissions are not expected from the mine shaft. The commenter also requests that the Department require additional monitoring for these pollutants.

See Commenter: 3

ADEQ Response:

The facility did not include any equipment operating in the mine vent shaft that emits VOCs. In addition, there was no information provided to suggest that there are any compounds in the mine vent shaft that would emit VOCs. Since there are no equipment that emit VOCs or natural sources that emit VOCs, there are no requirements to monitor for those emissions in the air quality permit.

F. Concerns About Soil Monitoring

Comment 31: Various commenters express concern with the locations of the monitoring locations with the respect to the dominant wind direction of the area and request that more gamma monitoring and soil sampling sites are added to target specific areas.

See Commenters: 1, 3

ADEQ Response:

The Department acknowledges the commenters' requests for additional monitoring and sampling sites. EFRI has added two more monitoring sites. A location was added in front of the Non-Stormwater Impoundment and in front of the Development Rock Area and the Ore Stockpile Area. The update can be seen in the Renewal Permit No. 88788 Appendix 1 to Attachment "D".

Comment 32: The commenter expresses concern that the monitoring and sampling regime is not adequate and that the "monitoring locations would not detect an exceedance until contaminations had reached far beyond the exterior boundaries of the Mine site."

See Commenters: 1, 3

ADEQ Response:

The facility is required to submit quarterly Gamma (Radiation) Monitoring reports, annual Soil Sampling reports (quarterly for the first

calendar year, then annually if the trigger levels are not exceeded). The Department believes that this frequency of monitoring and reporting is sufficient. In addition, the ADEQ believes the twelve monitoring locations (six gamma radiation, six soil sampling) around each site is sufficient to capture the maximum impacts from the mine. Locations further away from the site will have impacts less than those quantified at the monitoring locations.

Comment 33: The commenter requests that the “[f]requency of monitoring and sampling must be increased and required immediately at regular intervals.”

See Commenter: 3

ADEQ Response:

The facility is required to conduct periodic sampling of soil around the mine site to determine if any elevated readings of uranium and radium are detected. EFRI is required to submit semiannual compliance certifications to ADEQ certifying compliance with the terms and conditions of the air quality permit. The facility is also required to submit quarterly Gamma (Radiation) Monitoring reports, annual Soil Sampling reports (quarterly for the first calendar year, then annually if the trigger levels are not exceeded), and annual 40 CFR Part 61 Subpart B NESHAP reports. The Department believes that this frequency of monitoring and reporting is sufficient.

Comment 34: One commenter requests that the soil surrounding the facility be sampled for a variety of contaminants such as “inorganic arsenic, cobalt, lead, nickel, and selenium compounds, and cadmium, copper, zinc, which are recognized by EPA and ADEQ as hazardous air pollutants.”

See Commenter: 3

ADEQ Response:

The permit contains all applicable regulations in state and federal law and reduce fugitive dust emissions from inside the facility boundary. The permit also contains additional requirements to minimize fugitive dust emissions and mitigate the transport of dust from ore stockpiles, haul truck loading activities, and other dust producing activities in the Dust Control Plan. These conditions will result in less amounts of soil becoming airborne regardless of the contents of the soil.

State law requires the Department to issue a permit if the applicant is able to demonstrate that they will comply with all applicable air quality regulations. The Department is issuing this permit based on a thorough review of best available data.

Comment 35: The states that the trigger levels do not consider “the reality of a maximally exposed individual (MEI)” and that the “ADEQ should require trigger levels that are justifiably linked to biological pathways such as inhalation,

ingestion, and absorption.” In addition, the commenter requests that the ADEQ take into consideration “synergistic effects of radiation with other pollutants” and “ceremonial and medicinal plants, and the long-term impacts of dust and soil inhalation and ingestion on both children and adults.”

See Commenters: 1, 3

ADEQ Response:

State law requires the Department to issue permits if the applicant is able to demonstrate that they will comply with all current applicable air quality regulations. It should be noted that such an evaluation is not directly relevant to the air permitting process

The permit includes all applicable regulations from National Emission Standards for Hazardous Air Pollutants (NESHAP) and from New Source Performance Standards (NSPS) for the facility. ADEQ has determined the monitoring requirements in the permit developed from all current applicable air quality regulations are sufficient.

Comment 36: When referring to the report used to establish the trigger levels for the permit, the commenter expresses concern that “[t]he assumptions of the Report are horrifically Anglo-centric and completely disregard the manner that indigenous populations have interacted with the land and environment since time immemorial.”

See Commenter:1

ADEQ Response:

The Department acknowledges the expressed concerns. The renewal permit was written to represent the appropriate regulations allowed by state and federal law. The Department is issuing this permit based on a thorough review of best available data.

Comment 37: The commenter states that the trigger levels are made “meaningless in ensuring human and environmental health are protected from radionuclides and other contaminating elements” referring to the draft permit condition II.B.3.f of Attachment “D”

See Commenter: 3

ADEQ Response:

ADEQ believes the current structure of the permit (a fixed initial trigger level with subsequent trigger levels based on the previous reading) is sufficient for the protection of air quality.

Comment 38: The commenter expressed concerns that monitoring for PM does not commence until active mining operations and therefore does not consider preparation or other activities needed prior to beginning active mining.

See Commenter: 3

ADEQ Response:

The facility is required to demonstrate compliance with all conditions in the permit. The facility is required to submit semiannual compliance certifications to ADEQ certifying compliance with the terms and conditions of the air quality permit. The facility is also required to submit quarterly Gamma (Radiation) Monitoring reports, annual Soil Sampling reports (quarterly for the first calendar year, then annually if the trigger levels are not exceeded), and annual 40 CFR Part 61 Subpart B – NESHAP reports.

State regulations require air quality permits for facilities which emit or may emit any air pollutant. Mines which are not operating or are effectively closed cannot be required to obtain a permit.

Comment 39: The commenter states that “the ADEQ should require that the Permittee install, calibrate, maintain, and operate an anemometer to measure the wind speed at the Pinyon Mine site within 30 days of the permit being issued.”

See Commenter: 3

ADEQ Response:

The facility is required to install the anemometer “[p]rior to active mine operations that involve the placement of ore in storage piles or transfer of ore to haul trucks” per Condition III.B.1 of Attachment “D” of Renewal Permit No. 88788.

The majority of particulate emissions from facility will be in the form of fugitive dust from material handling and haul truck travel. Thus, installation of the anemometer before active mine operations as described in Condition III.B.1 of Attachment “D” is appropriate.

Comment 40: The commenter requests that ADEQ adopts “lower levels of wind speed and duration for what would prompt usage and facility adjustments ... and also ensure that wind gusts are also triggers for changes in operations and site activities” for the facility.

See Commenter: 3

ADEQ Response:

The Department has updated the modeling analysis for PM₁₀ and performed an additional ambient impact analysis for PM_{2.5}. The updated model used the most recent 5 years (2016-2020) of National Weather Service (NWS) data to capture the meteorological conditions of concern such as high wind speed episodes. The updated model demonstrated that

emissions from the Pinyon Plain Mine facility will not cause or contribute to a violation of the NAAQS for PM₁₀ and PM_{2.5}.

- Comment 41: The commenter requests that “tarps or other coverings be used to reduce potential dust pollution from ore and development rock areas.”
See Commenter: 3

ADEQ Response:

The ADEQ believes that the current structure of the permit is sufficient to protect air quality. The storage piles must be watered to control dust and if this is shown to be insufficient by monitoring, then additional controls will be required, such as the reduction of storage pile size, the construction of wind barriers, or the tarping of the piles.

- Comment 42: The commenter expressed concerns that the air quality permit does not contain any calibration, maintenance or operation of the anemometer, used to determine wind speeds at the facility.
See Commenter: 3

ADEQ Response:

The Department acknowledges the commenter’s request. The permit condition has been updated to include the calibration, maintenance, and operation of the anemometer part of the material condition. See III.A above for the change.

G. Transportation-Related Dust

- Comment 43: The commenter requests that “ADEQ must not permit water from the containment pond to be used for dust suppression on waste rock, ore piles, haul truck loading areas, or other surface areas at and surrounding the mine site, including roads that are used for accessing the mine site and/or that would be used for transporting ore from the site.”
See Commenter: 3

ADEQ Response:

The Department acknowledges the comment. This air quality permit does not regulate nor enforce any requirements for water quality. The facility is in the process of obtaining an APP which includes an agreement that water that is collected from the water capture rings in the mine shaft must be treated before use for dust control.

- Comment 44: Several commenters expressed concern about haul trucks containing uranium ore traveling through their communities and that the permit minimizes the impacts of radiation. One commenter requests that the haul trucks be completely sealed with more than a tarp.
See Commenter: 3

ADEQ Response:

The Department acknowledges the commenter's concerns. State law requires stationary sources (i.e. the mines) to obtain permits. ADEQ cannot look at off-site truck emissions when making a permitting decision.

The Department has included provisions in the permit that ensure the haul trucks will be sufficiently sealed with the tarp. The tarp will be lapped over the sides of the haul truck bed at least six inches, and secured every 4 feet with a tiedown rope. The Department has determined that the referenced provision provides adequate protection to address truck spillage concerns.

Comment 45: The commenter expresses concern about "a history of truck accidents related to previous uranium mining activities in the area."
See Commenter: 3

ADEQ Response:

The Department acknowledges concerns about the past history of truck accidents in the area. It should be noted that such an evaluation is not directly relevant to the air permitting process. State law requires the Department to issue a permit if the applicant is able to demonstrate that they will comply with all applicable air quality regulations.

H. Environmental Justice

Comment 46: The commenter requests that ADEQ conduct a learning site evaluation for the community surrounding the Pinyon Plain mine. Additionally, the commenter requests that ADEQ conduct a learning site evaluation to demonstrate that the impacts from the facility won't adversely impact the surrounding community.
See Commenter: 3

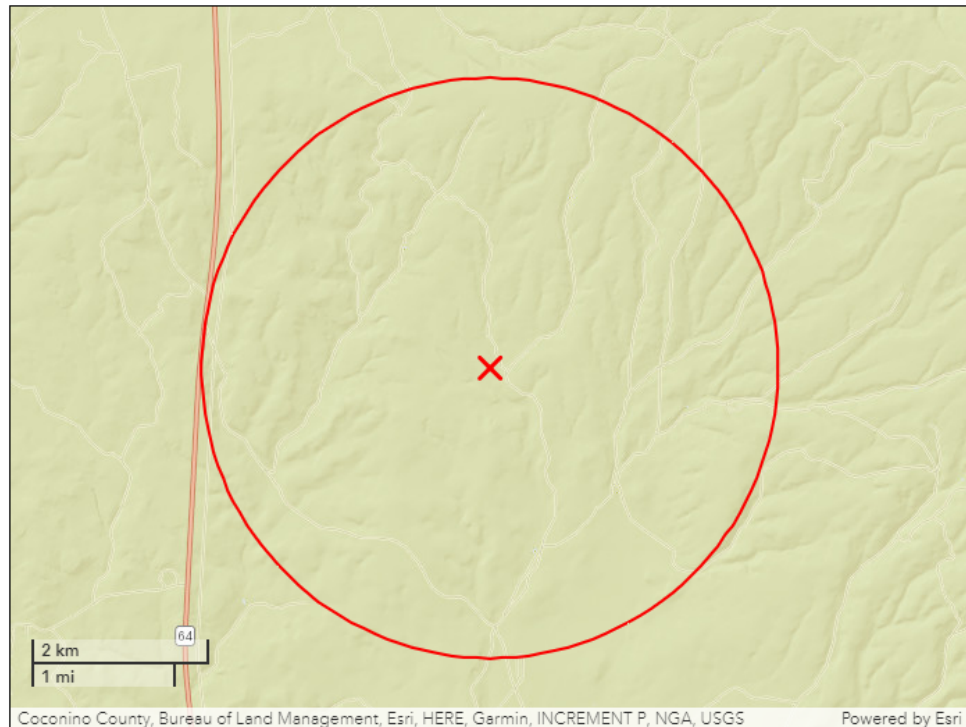
ADEQ Response:

For Class II Permits, the ADEQ Learning Site Policy requires that an evaluation be conducted for new permits and for revisions that increase criteria pollutants greater than the permitting exemption thresholds. According to the policy, "[p]ermit renewals without any associated modifications are exempt from the learning sites policy on the basis that they are existing facilities which have no new emissions and will be addressed as part of any future modification which results in an emissions increase greater than the permitting exemption threshold." Thus, based on the policy and the renewal application, there was no requirement to conduct a learning site evaluation for this permitting action.

Location
 Latitude: 35.882778 35° 52' 58" N
 Longitude: -112.096111 112° 05' 46" W

0 Impacted Learning Sites within 2.0 miles of location

Thu. Aug. 12, 2021



Impacted Learning Sites

ADEQ GIS Disclaimer
 The Arizona Department of Environmental Quality has compiled this GIS Web site from various sources. ADEQ cannot ensure that the information is accurate, current or complete. Neither the information presented, nor the map itself, are official documents.

Figure 1: Learning Site Evaluation for Pinyon Plain Mine

The Department conducted a Learning Site Evaluation in response to this concern. By definition learning sites “consist of all existing public schools, charter schools and private schools at the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board.” Using the Arc GIS tool, it was determined that there are no learning sites are within 2 miles of the facility. This can be seen in Figure 1 above.

Comment 47: The commenter states that “ADEQ has the responsibility to inform Tribes about this permit and to respond to their concerns about impacts to cultural sites, transport routes, public health, plant populations, and other issues.”

The commenter also states that “ADEQ should communicate with all Tribes that have lands along or adjacent to the haul route, as well as Tribes with cultural affiliations to the Grand Canyon.”

See Commenters: 3

ADEQ Response:

The Department acknowledges the commenter's concerns. The Department accepted comments on the Draft Permit and technical support document (TSD) from June 18, 2021 to July 19, 2021. In addition, the Department held a virtual public hearing on July 19, 2021 using GoToWebinar at 6:00 PM. Information about the public notice process was posted on the AZDEQ website and a public notice posting was sent to members of the ADEQ tribe mailing list. In addition to the public notice process, the ADEQ consulted with the Havasupai tribe during the public notice process on July 9, 2021.

Comment 48: The commenter states that “[i]ssuing this permit as proposed will violate many of the tenets of Environmental Justice.”
See Commenters: 3

ADEQ Response:

The Department acknowledges the environmental justice concerns that have been raised. During the 2016 renewal, the EPA's EJSCREEN tool was used to determine the size and demographics of the population within five miles of the facility. The results indicated that there was no one domiciled within 5 miles of facility, thus there was no affected population. Since that renewal, there has been no change in population counts within 5 miles of the facility and the EJSCREEN tool produced the same results. In addition, the renewal permit does not allow or permit any increases in emissions greater than the permitting exemption thresholds.

Comment 49: Several commenters stated that “[t]here is a legacy of contamination from uranium mining in the Southwest” and requests that “ADEQ should require additional protections and should engage in additional analysis to evaluate the environmental justice implications of this permit.”
See Commenter: 3

ADEQ Response:

The Department acknowledges the environmental justice concerns that have been raised. The renewal permit was written to represent the appropriate regulations allowed by state and federal law, and to maximize the environmental protections under both the Clean Air Act and the Arizona Administrative Code. The Department conducted new dispersion modeling as a result of the comments submitted and made changes to the permit as demonstrated in Section III above.

I. Documentation Submitted

For their comment Conservation Groups submitted a USB drive with additional sources to consider. The Department reviewed the contents submitted and determined that out of the

36 sources presented, 8 sources were related to air quality concerns. The Department acknowledges the material submitted.

V. COMMENTERS

Table 2 lists the names of the commenter, the organization they represent (if any), and how the comment was received by the Department. The table also shows the individual what page their comment and the Department’s response can be found.

Table 2: List of Commenters

Commenter No.	Commenter	Organization (if any)	Comment Format	Page Number(s)
1	Evangeline Kissoon	Havasupai Tribal Council	Email	6, 8, 10-11, 14, 18, 20
2	Edward T. Keable	Grand Canyon National Park	Email	11, 13-16
3	Megan Kelly	Grand Canyon Trust	Email	6-25
	Sandy Bahr	Sierra Club – Grand Canyon Chapter	Email	
	Taylor McKinnon	Center for Biological Diversity	Email	
	Kelly Burke	Wild Arizona	Email	
	Kevin Dahl	National Parks Conservation Association	Email	