


Review Memo and Comment Responses

**R.E. Pierson LLC
Pierson Rheems Quarry
Large Industrial Mineral Permit Application No. 36080301
NPDES Permit No. PA224651
West Donegal and Mt. Joy Townships
Lancaster County**

Approved: 
Michael Kutney, P.G. District Mining Manager
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Bureau of District Mining Operations
Pottsville District Office

Complied By: Tiffany Folk, P.G.
Permits & Technical Services Section
Pennsylvania Department of Environmental Protection
Bureau of District Mining Operations
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Dated April 15, 2026

BACKGROUND

Pierson Rheems LLC, (Pierson) submitted a major modification to their existing surface mining permit application (Permit No. 36080301) received on May 1, 2023, and a National Pollutant Discharge Elimination System (NPDES) application (Permit No. PA0224651) received April 11, 2023, for Rheems Quarry to increase the lateral acreage of the current mining permit and NPDES permit size by 29.58 acres from 102.64 acres to 132.22 acres. The applications do not include an increase to the NPDES discharge rate.

Rheems Quarry is located at the intersection of Anchor Road and Heisey Quarry Road/West Harrisburg Avenue in West Donegal and Mt. Joy Townships, Lancaster County and has been in operation since the 1920s. The additional requested acreage is on the western side of the quarry pit. While the town of Rheems is located east of the quarry pit. The quarry mines dolomitic limestone from the Epler formation. The expansion application does not change the final elevation of the quarry floor from its previous permitted amount of 126 feet mean sea level (MSL).

A public notice was placed in the LNP newspaper on May 24, 2023, May 31, 2023, June 7, 2023, and June 14, 2023. Notice of receipt of the application was published in the PA Bulletin on Saturday, April 29, 2023. Neighbors Against the Rheem Quarry Expansion (NARQE) requested a public meeting during the open public comment period. Notice of the public meeting was published in the LNP newspaper on January 24, 2024, and notice was also published in the PA Bulletin on January 20, 2024. A public hearing was held on February 21, 2024, from 6 pm to 8 pm. The Department of Environmental Protection (DEP) representatives were available between 5 pm to 6 pm to answer questions from the public on permitting process and regulatory requirements. DEP attendees included: John Repetz, Deputy Director of Regional Communications, Michael P. Kutney, P.G., District Mining Manager for Pottsville District Mining Office (PDMO); Tiffany Folk, P.G., Permit Chief and lead reviewer at PDMO, Ross Klock, Compliance Manager and former Blasting Inspector at PDMO.

TIMELINE

April 11, 2023: NPDES application received

April 13, 2023: Letter to Pierson informing them the completeness review complete, NPDES application accepted for technical review

April 29, 2023: Notice of Application Received for NPDES published in Pennsylvania Bulletin

May 1, 2023: Mining permit application received

May 3, 2023: Letter to Pierson informing them the completeness review complete, mining permit application accepted for technical review

May 20, 2023: Notice of Application Received for mining permit application published in Pennsylvania Bulletin

May 23, 2023: Proof of publication received for NPDES permit renewal; publication dates April 18, April 25, May 2, and May 9, 2023

June 9, 2023: End of public comment period for NPDES permit renewal

July 14, 2023: Proof of publication received for mining permit; publication dates May 24, May 31, June 7, and June 14, 2023

July 13, 2023: Public hearing requested

July 14, 2023: End of public comment period for mining permit

January 20, 2024: Notice of public meeting published in the Pennsylvania Bulletin

January 25, 2024: Notice of public meeting published in LNP Newspaper

February 21, 2024: Public hearing held at Rheems Fire Department

March 7, 2024: End of comment period for public hearing written comments

April 12, 2024: Technical deficiency letter issued

June 10, 2024: Response to technical deficiencies received

February 15, 2025: Draft NPDES permit published in PA Bulletin

February 15, 2025: public comments were shared with Pierson

June 6, 2025: DEP requested additional information for operations and maintenance costs for well replacement and repair

June 11, 2025: Pierson provided additional information

January 22, 2026: DEP requested an updated PNDI

January 23, 2026: Pierson provided an updated PNDI

LIST OF ACRONYMS

AQ	Air Quality
DCNR	Department of Conservation and Natural Resources
DEP	Department of Environmental Protection
DMO	District Mining Office
ECB	Environmental Cleanup & Brownfields
MSL	Mean Sea Level
NARQE	Neighbors Against the Rheem Quarry Expansion
NPDES	National Pollutant Discharge Elimination System
PA	Pennsylvania
PA FBC	Pennsylvania Fish and Boat Commission
PA SHPO	Pennsylvania State Historic Preservation Office
PNDI	Pennsylvania Natural Diversity Index
PFAS	Per- and polyfluoroalkyl substances
PDMO	Pottsville District Mining Office
Pierson	Pierson Rheems LLC
USFWS	U.S. Fish and Wildlife Services

SUMMARY OF SUBSTANTIVE ISSUES

Below is a summary of DEP's consideration of substantive issues arising during the review of the applications and the comments received. Many of these topics addressed below are also addressed in detail in the comment response document (Attachment A).

DEP received written comments during the open public comment period, eleven people provided oral statements at the public hearing, and additional written comments were received during the extended public comment period. PDMO created this review memo and a comment response document (Attachment A) as part of the review and analysis of the Rheems Quarry mining and NPDES permits. All public comments that were provided to DEP are catalogued in the comment and response document, separated out by discrete issues, and responded to in detail. DEP also shared the comments with, the applicant, Pierson. The overall purpose of the Review Memo and Response to Comments, is to answer all public input holistically or comprehensively rather than piecemeal, and to provide a framework and rationale for why the permits are being issued.

A significant number the comments were related to surface and groundwater quality, sinkholes, zoning issues, air quality, and blasting. The mining permit provides the requirements that must be met to ensure compliance with the Federal Surface Mining Conservation and Reclamation Act, Noncoal Surface Mining Conservation and Reclamation Act, Clean Streams Law, and the Pennsylvania Air Pollution Control Act. The NPDES permit provides the requirements that must be met to ensure compliance with the Federal Clean Water Act, Pennsylvania Clean Streams Law and all applicable regulations promulgated pursuant to these laws.

GROUNDWATER

The Groundwater Model Report found in Module 8 of the Rheems quarry permit expansion application provides a description of the hydrology of the area with respect to the permit area and surrounding area. During the review process, DEP considered the effects the permit may have on the hydrologic balance and evaluated the probable hydrologic consequences of issuing this permit, as required by 25 Pa. Code §§ 77.403 (Description of hydrology and geology), 77.405 (Groundwater information), 77.457 (Protection of hydrologic balance); 77.521 (General Requirements), and Section 7 Permitting of the Noncoal Act. Pierson submitted a groundwater model to evaluate the hydrologic balance within the quarry and adjacent areas. The groundwater model describes a probable impacted zone of influence that Pierson will be required to restore or replace affected water supply wells. The quarry has posted bond for well replacements.

Pierson submitted a groundwater model to evaluate the hydrologic balance within the quarry and adjacent areas. The groundwater model gives a probable impacted zone of influence of the quarry. Section 77.126(a)(3) states the application affirmatively demonstrates an "Applicant has demonstrated that there is no presumptive evidence of potential pollution to waters of this Commonwealth." In addition to the required background testing, Pierson offered at the public

hearing to test anyone who wanted a test completed. One request for additional testing was received and that test was completed and included in Module 8 of the application.

DEP has reviewed the applications, and the applicant has demonstrated that there is no presumptive evidence of potential pollution to waters of the Commonwealth. The applicant conducted background sampling to demonstrate the current status of groundwater around the acreage to be added to the permit boundary. Sampling at the NPDES outflow did not show any parameters of concern. The applicant discharges stormwater and groundwater at the NPDES discharge point.

The quarry has been in operation since the early 1920s and DEP's records for this quarry date back to before 1940. During this time Pierson has only had to replace 2 wells. The Rheems Quarry has currently mined to the final pit floor elevation of 126 ft mean sea level (MSL). The quarry is not requesting to mine deeper in the current pit or expansion area to the current pit. The major revision is to add approximately 30 acres to the western permit boundary. The 30 acre area will be mined to the depth of the current final pit floor. The 2 replacement wells were drilled deeper than the final pit floor elevation. Pierson completed the restoration of water of the affected wells in a timely manner.

In addition, since the quarry started operating there is only a record of two sinkhole complaints of which Pierson was found responsible for only one of them in 2023. As part of the expansion application, Pierson had to file a Karst Supplement which is found in Exhibit 6.2A, Zone of Influence. The Zone of Influence (ZOI) is the extent of effect the quarry will have on groundwater during mining operations. A quarry's ZOI is developed using historic monitoring and pumping data, pumping tests, computer software for hydrologic assessment, geophysical surveys and any other relevant information. DEP uses the ZOI, current and historic groundwater data, and the Karst Supplement to evaluate well complaints and sinkhole complaints. The Karst Supplement is intended to supply additional information on karst features existing in the general permit area and an assessment specific to potential karst impact from the proposed mining activities in order to allow DEP to evaluate the hydrologic impacts.

DEP has determined through a review of the permit application that the Rheems Quarry expansion is not expected to cause additional disruption of the hydrologic balance in and around the town of Rheems and the expansion area of the mine. The expansion area is on the opposite side of the quarry pit from Rheems. While karst features are present in the existing Rheems quarry, no large conduits that transport large volumes of water and sediment are present. DEP has an understanding of the existing hydrologic balance as it relates to sinkholes and will be able to take appropriate action if sinkhole activity increases due to mining in the expansion area.

DEP does not expect karst features related to quarry activity or that will affect quarry activity outside the quarry zone of influence. There is no anticipated hydrologic connection to the quarry beyond the quarry zone of influence.

BLASTING

Rheems Quarry will perform quarry blasting in accordance with its approved Module 16 Blasting Plan included in the expansion permit application. The quarry could be conducting blasting activities Monday through Friday between the hours of 9:00 AM and 4:00 PM.

Blasting activities at noncoal sites are required to comply with the requirements of PA Code Title 25 Chapters 77 and 211. Pennsylvania regulations require that blasting be monitored for ground vibration and airblast.

With regard to ground vibration, PA Code Title 25 Section 211.151(c) states that all blasts shall be conducted in a manner that meets the maximum allowable peak particle velocity as indicated by the U.S.B.M. Z-Curve at the closest building or other structure designated by DEP. With regard to airblast, PA Code Title 25 Section 211.151(d) states that blasts shall be conducted to control air blast so that it does not exceed the maximum allowable air blast of 133 dB(L) (that is, linear decibels). DEP's stringent limits for ground vibration and airblast are set so that levels are below the limits, such that damage to buildings or other structures is highly unlikely.

Specifically, many studies have been performed which confirm that DEP's regulations are based on safe blasting limits intended to ensure that homes and other structures are not damaged by controlled blasting methods. The supporting literature used within the Commonwealth are in part: 1. "Vibrations From Blasting", DESA Dr-31, Special edit. for PA DEP, August 5, 1997, David E. Siskind, p.20. 2. RI 8507, Structural Response and Damage Produced by Ground Vibration From Surface Mine Blasting, Bureau of Mines Report, U. S. Dept. of Interior, 1980. 3. RI 8485, Structural Response and Damage Produced by Airblast from Surface Mine Blasting, Bureau of Mines Report, U.S. Dept. of Interior, 1980.

Additionally, PDMO reviewed Rheems Quarry blasting compliance history and complaints for the past ten years. During this time period there were thirteen complaints. DEP had investigated each of these complaints and did not find that the quarry's blasting was responsible for any alleged damage. Pierson Rheems Quarry was not cited for any violations related to blasting activities.

Furthermore, the proposed expansion area is on the opposite side of the quarry from the town and thus further away from homes, schools, and other structures near the current permitted quarry.

AIR QUALITY

The Rheems Quarry permit includes Module 17 as required by PA Code 25 Chapter 77 Noncoal Mining §§ 77.455 and 77.575. Fugitive dust control measures shall demonstrate compliance with Chapters 121, 123, 127 and 129. (§77.575).

Further, 25 Pa Code § 123.1(c) requires that a person responsible for sources such as unpaved roadways, stockpiles and blasting operations shall take all reasonable actions to prevent particulate matter from becoming airborne. These actions include, but not be limited to, the following: (1) Use, where possible, of water or chemicals for control of dust in the demolition of buildings or structures, construction operations, the grading of roads or the clearing of land; (2) Application of asphalt, oil, water or suitable chemicals on dirt roads, material stockpiles and other surfaces which may give rise to airborne dusts; (3) Paving and maintenance of roadways; (4) Prompt removal of earth or other material from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water, or other means. DEP inspects the facility and enforces this regulation.

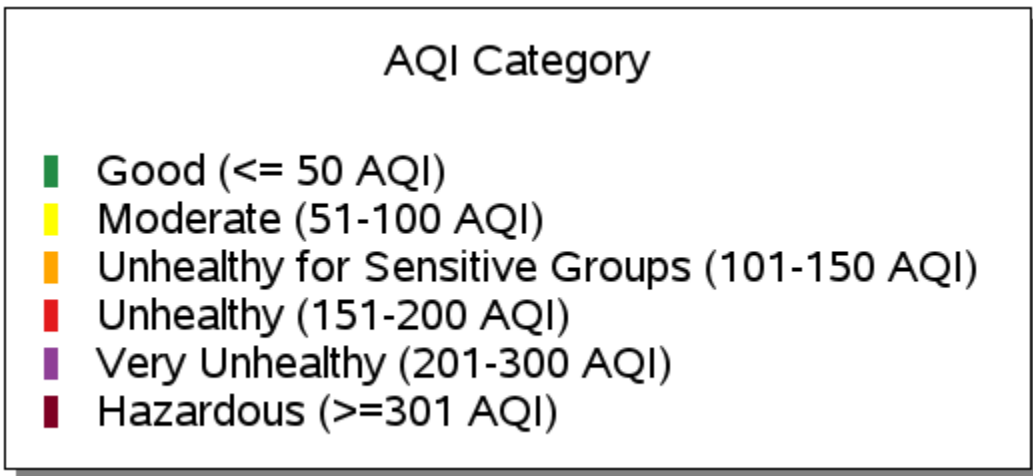
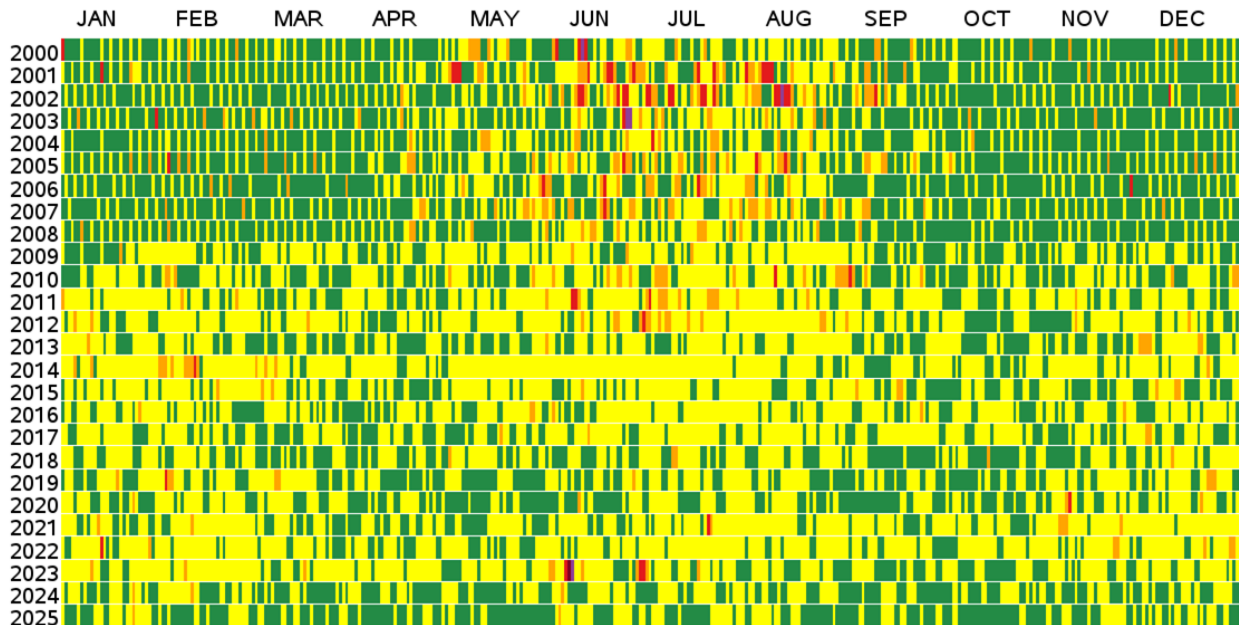
These requirements and others relating to good air pollution control practices are found in the facility's current air quality natural minor operating permit which is enforced by DEP. As such, the expansion operations do not change the air permit requirements and as such are not expected to have a meaningful effect on ambient air concentrations of criteria pollutants such as PM10 and PM2.5.

To address the comment that “Bad air days in Lancaster County have moved from occasional to daily,” the figure below shows the highest daily air quality index (AQI) from 2000-2025 for all AQI measured pollutants at two of DEP's Lancaster monitoring sites (Site AQS ID# 42071007 – Lancaster and Site AQS ID# 420710012 – Lancaster Downwind). (U.S. EPA Air Data, generated 4/2/2026 at www.epa.gov/air-data.) Days with AQI levels categorized as “Unhealthy for Sensitive Groups” or worse are infrequent, markedly lower than historical averages. The overall decline in unhealthy days demonstrates sustained improvements in Lancaster's air quality, notwithstanding four exceptional events in 2023, which DEP overwhelmingly determined was caused by the transport of smoke associated with Western Canada, Nova Scotia, Quebec, and New Jersey wildfires. It should be noted that the ozone standard was strengthened in 2008, and again in 2015, which results in some days being classified as “Moderate” that might previously have been classified as “Good.” Despite this more stringent standard, there are still notably fewer unhealthy air quality days in recent years.

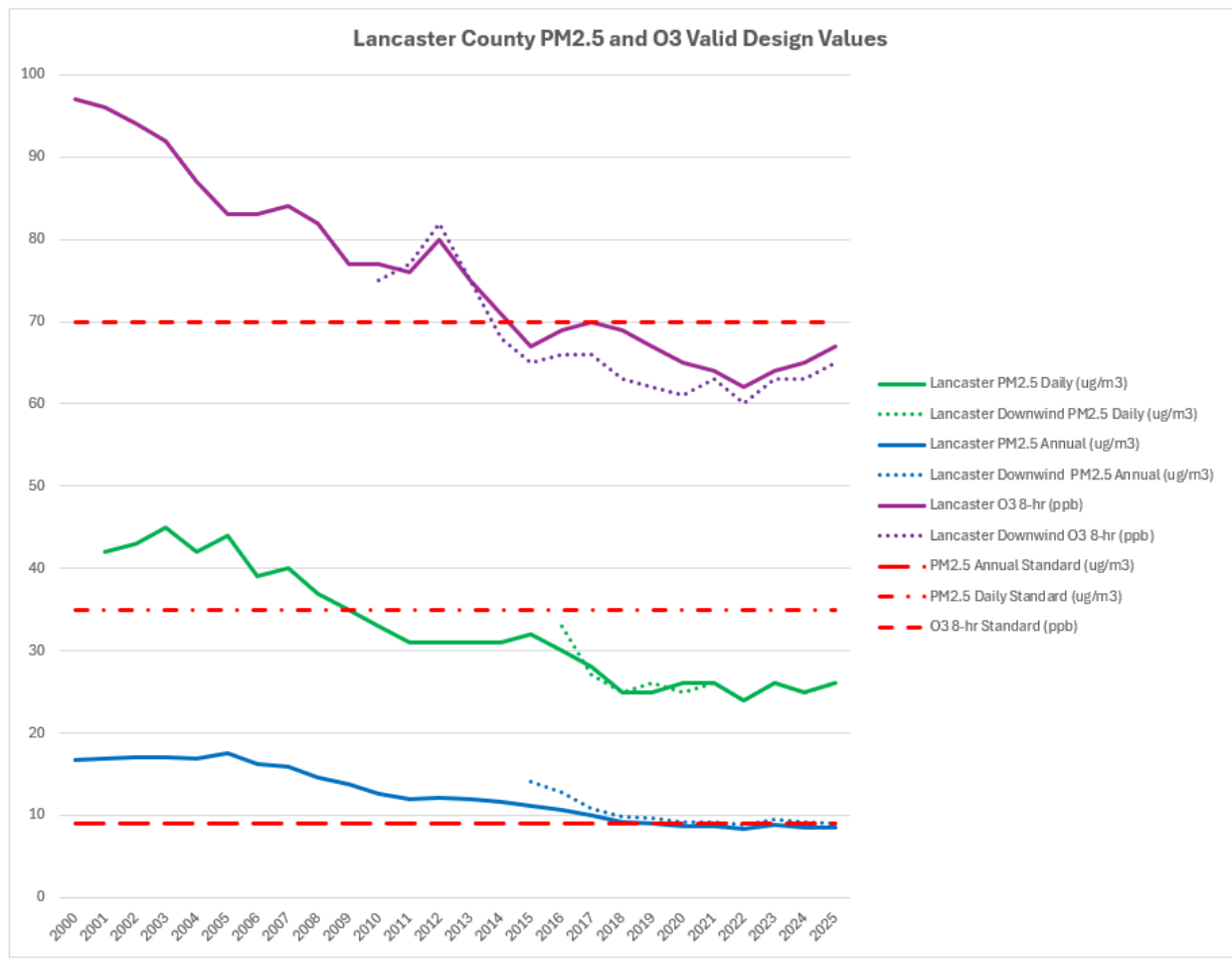
Specifically, DEP conducted an in-depth analysis into the contributions of high ozone across the Commonwealth on June 1-2, 2023, and June 29-30, 2023. DEP concluded that transport of smoke associated with Western Canada, Nova Scotia and New Jersey wildfires contributed to elevated ozone concentrations that occurred on June 1-2, 2023. DEP concluded that transport of smoke associated with Quebec wildfires contributed to elevated ozone concentrations that occurred on June 29-30, 2023. Utilizing factors such as surface and upper air meteorology, satellite imagery, and pollutant data, DEP determined that the smoke plume associated with the wildfires had an impact on ozone formation across the Commonwealth. The wildfires affected air quality across the Commonwealth in such a way that a clear causal relationship between the wildfires and ozone monitored exceedances exists on the above-mentioned dates, therefore satisfying the clear causal relationship criterion as it relates to exceptional events.

DEP also conducted an in-depth analysis into the contributions of high PM2.5 across the Commonwealth on June 6-8, 2023, and June 28-July 1, 2023. DEP concluded that transport of smoke associated with Quebec wildfires contributed to the elevated PM2.5 concentrations that occurred on these dates. Utilizing factors such as surface and upper air meteorology, satellite imagery, and pollutant data, DEP determined that the smoke plume associated with the Quebec wildfires produced fine particulate that had an impact across the Commonwealth. The Quebec wildfires affected air quality across the Commonwealth in such a way that a clear causal relationship between the wildfires and PM2.5 monitored exceedances exists on June 6-8, 2023 and June 28-July 1, 2023, therefore satisfying the clear causal relationship criterion as it relates to exceptional events.

Daily AQI Values, 2000 to 2025 Lancaster County, PA



Additionally, DEP has reviewed Lancaster County design value data. The Lancaster monitor, sited just east of the city, mentioned above measures daily criteria pollutants, ozone, fine particulate matter (PM2.5) and particulate matter less than 10 microns (PM10). The Lancaster Downwind site, about 10 miles east of the city monitor, measures daily criteria pollutants ozone and PM2.5. Also, DEP has analyzed the composition of the PM2.5 collected at the Lancaster and Lancaster Downwind monitoring sites and determined that ammonium nitrate in the air, largely attributed to agricultural activity, is a significant contributor to observed PM2.5 concentrations in Lancaster. Based on the available data, it appears that Lancaster’s air quality has generally improved over time.



WETLANDS

No Wetlands are affected by the expansion application.

LAND USE INFORMATION:

In a letter dated April 17, 2023, the Lancaster County Planning Commission stated that the proposed expansion is consistent with the Lancaster County comprehensive plan. The Commission included comments that managing and preserving quarrying is an essential industry that provides locally available raw materials.

A copy of West Donegal Township's amended ordinance dated October 11, 2021, was also included with the expansion application. The 30-acre tract of land for the expansion area was originally classified as an Agricultural District and was reclassified as Mining and Natural Extraction District. The ordinance deemed this change in classification was in the best interest of the township's public health, safety and general welfare.

CULTURAL AND HISTORIC RESOURCES

The Rheems Quarry expansion application included a letter dated September 27, 2021, from the PA SHPO stating that based on the information it received and available in its files it is PA SHPO's opinion that there are no above ground historic or archaeological properties present in the project area of potential effect.

PENNSYLVANIA NATURAL DIVERSITY INDEX (PNDI)

On April 12, 2023, Pierson submitted a PNDI for the 30-acre expansion area. No known impacts were found, and no further review was required by the Pennsylvania Game Commission, DCNR, Pennsylvania Fish and Boat Commission or the United States Fish and Wildlife Services.

On January 23, 2026, Pierson submitted a revised PNDI for the 30-acre expansion area since it had been over two years since the initial PNDI was submitted. The results indicated there were no known impacts, so no further review needed to be done by the U.S. Fish and Wildlife Services (USFWS), Pennsylvania Fish and Boat Commission (PA FBC) or DCNR. The results for the Pennsylvania Game Commission listed "conservation measures" under results but also stated no further review by it was necessary. Under the agency comment section for Pennsylvania Game Commission, it stated that it deferred to the USFWS. The USFWS comment section stated that no impacts to federally or proposed species are anticipated. Therefore, there are not any conservation measures needed at this time.

BONDING

The original bond posted on the site was for \$956,659.29. With the increase of the 30 additional acres the bond amount increased by \$2,164,888.00 bringing the new bond total for the entire site to \$3,121,547.29.

In addition to this bond amount, Pierson has posted \$88,000 of water lost bond for wells within the zone of influence that may be affected by mining activities at the quarry. There are 8 wells

located within the zone of influence. DEP determined that the bond amount satisfies the requirements of 25 Pa. Code §§ 77.126(b)(1) and 77.193(c).

RECLAMATION PLAN

Pierson has not made any changes to the reclamation plan that was previously approved. The post mining land use will be unmanaged natural habitat vegetation surrounding the water filled pit. This is consistent with the statutory and regulatory requirements in section 7 of the Noncoal Act and 25 Pa. Code §n 77.126(a)(9).

OPERATION INFORMATION

Pierson plans to mine the expansion area once approval is provided by DEP. Pierson will mine 21 of the additional acres and the remaining 9 acres will be used as a support area. There will not be separate phases. Pierson will mine a lift until the ultimate depth of 126 feet MSL is reached.

ARTICLE I SECTION 27

DEP is required by law to review permit applications such as R.E. Pierson's for Rheems Quarry in accordance with established laws and regulations and the Pennsylvania Constitution. DEP takes its obligations to do this seriously.

More specifically, the purpose of the Noncoal Act is to have industry proceed in a manner that "improve[s] the use and enjoyment of the lands," "enhance[s] land use management and planning," "enhance[s] the value of the land for taxation," while protecting "birds and wildlife," "aid[ing] in the prevention of pollution of rivers and streams," "protect[ing] water supply," and "eliminate[ing] hazards to health and safety." 52 P.S. § 3302.

DEP carefully reviewed R.E. Pierson's submissions and technical data which also include correspondence that asked for more information and verification through a technical deficiency letter. There are also many limestone operations in Lancaster County and throughout Pennsylvania that DEP staff have extensive experience permitting and regulating.

PDMO coordinated its review and shared the information it was provided from the applicant and from public comments with various DEP programs internally to evaluate hydrologic and stormwater management matters unique to this site, air quality concerns, general nuisance questions, surrounding natural resources and recreation concerns as well as the potential impact on the proposed activities on the local community.

Specifically, PDMO contacted several programs in DEP's Southcentral Regional Office. The Environmental Cleanup and Brownfields (ECB) confirmed that there were not any known releases of PFAS contamination within the quarry zone of influence and surrounding areas. The review of the application by DEP determined that potential pollution to waters of the Commonwealth is unlikely. Mining activities at the Rheems Quarry do not involve any known use of PFAS compounds in the mining process so PFAS compounds are not expected in the quarry discharge. PDMO also contacted the Air Quality program to ensure there would be no meaningful effect on ambient air concentrations of criteria pollutants for the quarry's expansion. The safe drinking water program was contacted to verify that there not any municipal water supplies within the zone of influence of the quarry. The Clean Water program was contacted to verify that PFAS in mining activities was not included in the PFAS monitoring and report strategy for NPDES permits. The Clean Water program stated that PFAS is not known to be utilized in mining activities and mining was not included as an industry that PFAS would need to be included as a sampling parameter in its NPDES permit.

DEP thus brought to bear its own team of expert geologists, engineers, and other technical professionals to address the various issues raised by the Rheems Quarry applications.

In addition, DEP received input from multiple resource agencies, many of whom are also Article I, Section 27 trustees such as, the Pennsylvania Department of Conservation and Natural Resources (DCNR), the Pennsylvania Gaming Commission, and the Pennsylvania State Historic Preservation Office (PA SHPO).

DEP has carefully reviewed and considered public comments and reports submitted during its review of this application. The permit application regulatory process itself required R.E. Pierson to provide extensive detailed information related to the environmental effects of the quarry expansion including general environmental resource information, a description of the hydrogeology and geology, groundwater and surface water information, vegetation, alternative water supply information, and land use considerations. PA Code Title 25 Chapters §§ 77.401-77.410. DEP has fully considered the environmental effects of its action to approve the applications and has determined that these approvals will not result in the unreasonable degradation, diminution, depletion or deterioration of the environment. The review of this material is discussed throughout this comment response document.

CONCLUSION:

Having considered the application, the updates to the application, and the relevant statutes, regulations, policies, and Pennsylvania Constitutional obligations, I recommend the issuance of the NPDES and Surface Mining Permit

Table of Contents for Attachments to DEP's Pierson Review Memo

Item	Description
A	Public Comment & Response Document
B	DEP has completed a NPDES Fact Sheet
C	NPDES Written Findings