Module 17: Air Pollution and Noise Control Plan

17.1 Processing Facilities

a) Indicate whether or not there will be any processing facilities in the permit area. (Key to Exhibit 9)

Type of Processing Facility	*YES*	*NO*	*If Yes:*	*DRY*	*WET*
Crushing	☒	☐		☐	☒
Screening	☒	☐		☐	☒
Cleaning	☐	☒		☐	☐
Stockpiling	☒	☐		☒	☐

b) Describe the processing facilities and the amount of minerals to be processed.

1) Processing Facilities

The processing facilities will consist of an impact crusher jaw crusher, cone crusher, vibratory screen, and radial stacker. The operator is proposing to process 325,000 TPY of limestone.

2) Minerals to be processed 1,300 tons/day

3) If the amount of minerals to be processed is less than 200 tons/day, describe the management practice to be utilized to control fugitive dust. (**Note:** If the amount of minerals to be processed is equal to or greater than 200 tons/day, contact the appropriate DEP Regional Office Air Quality Program).

Permit GP3-63-00970F was secured through the air quality program issued on 5/27/2022 for the Maggie Lynn mining site. Site equipment is electric and includes two crushers a vibratory and non-vibratory screen and two conveyors. Permit authorization included on pages 17-4 to 17-12.

17.2 Fugitive Dust Control

Describe the fugitive dust control practices that will be utilized at the surface coal mining operation to include practices that will be utilized for the following activities:

a) Access roads, haul roads and adjoining portions of the public road.

Use of water and/or calcium chloride on access and haul roads, and prompt removal of earth or other materials form the public road. Road will be watered at least daily during dry weather.

b) Truck traffic (including fugitive particulate material from truck loads).

Travel speed of trucks and equipment will be restricted. A speed limit of 15 mph is expected when on haul roads of the permit area, and 5mph will be honored when crossing the Equitable Gas D-480 gas line, per an agreement. This limit will be noted with site signage. All trucks will be tarped leaving the site. Signage and tarping of trucks will be enforced by the permittee.

c) Drilling operation.

Drills will be equipped with hoods and dust collection devices. If these are not adequately eliminating fugitive dust then only drills equipped with water sprays will be utilized.

d) Overburden removal and coal extraction.

The amount and area of blasting will be restricted at any one time. Blasting will be redirected if excessive fugitive dust is produced.

e) Stockpiles (overburden, topsoil, coal).

Lime stockpiles will be treated with water and/or calcium chloride when necessary. Dampening the stockpiles prevents dust blow-off. Topsoil stockpiles (which should be minimal with the underground mine) will be seeded as soon as possible with temporary quick growing grasses to provide surface stability. When possible, topsoil removed from a new area will be spread directly onto a recently reclaimed area and seeded with permanent grasses to reduce the amount that has to be stockpiled.

f) Loading and unloading areas.

Front-end loader operators will be instructed to minimize the bucket height and thus the drop distance between the bucket end the truck bed being loaded.

g) Crushing and other processing equipment.

Not Applicable

h) Conveyors.

Not Applicable

Activities under 17.2 a) through h) which are addressed and regulated as part of a separate Air Quality Permit need not be addressed on this module. Indicate which activities (or specific aspects of an activity) are addressed under a separate Air Quality Permit.

Not Applicable

17.3 Noise Control Plan

a) List all noise sources from equipment and mining activity that will originate within the permit area.

Blasting addressed in module 16 provides the highest decibel noise that will be associated with the mining. This will be at a maximum as blasting is done to open underground mine portals. Typical equipment that will be used on site are the crushers (breakers) used with the processing plant and trucking in and out of the site, and all associated noise of the usage of that equipment.

b) Indicate the standard days and hours of operation for mobile and stationary equipment: *Plans are to work primarily one daylight shift at the site. The on-site equipment should not be operating continuously. Therefore, there should be no equipment operations, during nights, weekends, or holidays.*

c) Indicate any of the following non-standard/extraordinary operational days and hours:

- ☐ Continuous 24 hours a day. Which equipment?
- ☐ Night time hours. Which equipment?
- ☐ Weekends. Which equipment?
- ☐ Holidays. Which equipment?
- ☐ Other. Which equipment?

d) Are any of the following located adjacent to the proposed mine operation? Check all that apply and include distance and details.

☒ Residential Areas
☐ Schools
☐ Hospitals
☒ Churches

Details: *There are four homes along Pump Station Road west of the mining area on the opposite side of Six Mile Creek. The nearest of the homes is approximately 1,700 feet from the exsiting limestone surface mine. The East Bethlehem Church along Buckingham Road (SR2024) is over the ridge from the existing mine site. It is approximately 2300 feet away. The Bethlehem Center school district complex (High School, Middle School and Elementary) is north-east of the mining operation along the intersection of Morey and Crawford Roads. As the crow flies the nearest building is 1.4 miles from the site.*

e) Describe the pre-mining environmental sound levels within the adjacent area during weekdays, night time, weekends, and holidays.

Studies to analyze noise in rural settings have shown that the higher decibel(dB) events are dictated by wind speed. The stronger the wind the higher the rating. Typically, high winds can take the ambient noise level of between 36-39 dB (dB re 20 μPA) and raise the maximum sound of 42-46 dB. For comparisons sake a quite library setting is considered approximately 40 dB while ordinary spoken conversion is considered at approximately 60 dB. .In a rural setting, especially one such as the location of the future mine site noise variation is expected to be minimal as the primary creation of noise in any atmosphere is vehicle traffic.

With the surface limestone mine under operation at the Maggie Lynn site. The sounds of the crushers and trucking have become a part of the pre-underground mining levels as the above ground limestone operation has been in operation since 2012, though surface mining of coal has occurred near this location on and off for over 50 years

f) Has a noise study been conducted to characterize the pre-mining noise levels of the surrounding area and estimate the noise levels from the proposed mine operation? ☒ Yes ☐ No
If yes, submit that study.

See Module 17.3f Attachment. Pages 17-13 to 17-16.

g) Describe the measures (best management practices) that will be taken to mitigate noise and prevent noise from becoming a public nuisance.

Reclamation activities are to occur in one shift primarily during daylight hours. Operational hours should not coincide with the sleep Schedule of local residents working with a typical first shift job. Further steps include.

- *Blasting will only be done during daylight hours.*
- *Use of mufflers on heavy equipment as necessary*
- *The use of jake brakes will be minimized.*
- *Shielding on other equipment use*

The resulting engine noise from the equipment will be reduced with proper mufflers that undergo regular inspections. Straight pipes will not be permitted and holes in mufflers will be repaired. Louder site noises that are a part of mining activities are going to be the equipment of the limestone crushing operations, track rattling noise of large mobile equipment like a bulldozer, especially while backing up, the tailgate banging associated with material being dumped on site and the backup alarms on all vehicles that are there for notification purposes. By nature, some of these noises are perpetuated in efforts to comply with MSHA (Mining Safety and Health Administration) which are going to require louder noise just for the safety of those working around vehicles.

COMMONWEALTH OF PENNSYLVANIA **MEMO**
Department of Environmental Protection
Southwest Regional Office

TO Air Quality Permit File GP3-63-00970F

FROM Jesse S. Parihar/JSP
Air Quality Engineering Specialist
Air Quality Program

THROUGH Edward F. Orris, P.E./EFO
Environmental Engineer Manager
Air Quality Program

Mark R. Gorog, P.E. JEM for
Regional Program Manager
Air Quality Program

DATE May 27, 2022

RE Review of General Permit Application
Neiswonger Construction Inc.
Portable Nonmetallic Mineral Processing Plant
Maggie Lynn Quarry
Deemston Borough, Washington County
AUTH # 1393225; APS # 1061756; PFID # 748671

BACKGROUND:

On April 12, 2022, the Department received GP3-63-00970F application from Geotech Engineering, Inc. ("Geotech") on behalf of Neiswonger Construction Inc. ("Neiswonger") to update their GP-3 equipment at their existing Maggie Lynn Quarry located off of Pump Station Road off Morey Road (SR 2041) in Deemston Borough, Washington County. The facility possesses a noncoal surface mining permit number SMP No. 63100401-07. On May 12, 2022, the Department requested a copy of mining permit from the applicant which was provided on May 20, 2022. The facility operates under NAICS Code No. 212319. The Neiswonger has proposed to operate all the sources by electricity from the electric grid year-round. The production throughput of crushed nonmetallic minerals is expected to be approximately 500,000 tons on a 12-month rolling basis. On July 16, 2020, the Department authorized GP3-63-00970E and GP11-63-00970B general operating permits for the Maggie Lynn Quarry and was set to expire on July 16, 2025.

The proposed application was received to update GP-3 sources and to eliminate the current GP-11 permit sources which includes all the existing diesel engines. On February 16, 2022, Geotech informed the Department via an e-mail that the entire facility will be run off by an electric grid within 45 days. On April 18, 2022, the applicant informed the Department that the Maggie Lynn Quarry will go solely electric on June 6, 2022. Additional technical and administrate information

was requested on April 13, May 12, and May 23, 2022. All the requested information was received on May 26, 2022.

Geotech has proposed to operate the following equipment under GP3-63-00970F application:

- One (1) Primary Jaw Crusher, Model No. Pioneer 3055, manufactured by Astec, rated at 299 tph, and was installed in June 2021. Expected hours of operation are 2,000 hr/yr;

- One (1) Cone Crusher, Model No. KPI-JCI Kodiak, manufactured by Astec, rated at 255 tph, and was installed in June 2021. Expected hours of operation are 2,000 hr/yr. The cone crusher feeds the following stackers:

  a. North Star Equipment 30' x 100' conveyor return feeds to the cone crusher. Capacity 51 tph.
  b. North Star Equipment 30' x 80' stacker feeding #57 pile. Capacity 106 tph
  c. North Star Equipment 30' x 60' stacker feeding #8 pile. Capacity 57 tph
  d. North Star Equipment 30' x 80' stacker feeding #10 dust pile. Capacity 43 tph

- One (1) Vibratory Screener, Model No. JCI 6203-32LP, manufactured by Astec, rated at 410, and was installed in June 2021. Expected hours of operation are 2,000 hr/yr. This Screener feeds three (3) separate radial stackers:

  a. North Star Equipment 30' x 80'- feeding a 2A gravel pile. Capacity 99 tph.
  b. KPI-JCI 13-3680 Radial stacker feeding AASHTO #3 pile. Capacity 107 tph
  c. MEI 42' x 120' radial stacker feeding the cone crusher. Capacity 204 tph

- One (1) Non-Vibratory Screen, Model No. Johnson Crusher, manufactured by Astec, rated at 260 tph, and was installed in June 2021. Expected hours of operation are 2,000 hr/yr; and

- Two (2) Conveyors, manufactured by North Star, rated at 51 tph, and were installed in June 2021. Expected hours of operation are 2,000 hr/yr.

RFD:

On May 11, 2022, the applicant requested the Department to withdraw RFD-63-00973B as all the sources and controls at the facility have been consolidated in the proposed GP3-63-00970D application. This RFD was regarding the installation and operation of a Portable Jaw Crusher and a Low-Profile Screen. The RFD now has been withdrawn in the system on May 11, 2022.

MUNICIPAL NOTIFICATIONS:

On April 7, 2022, Deemston Borough and Washington County were notified by the applicant for the proposed project via a certified mail. The proof of receipt of notifications were received on May 26, 2022.

NOTICE OF VIOLATION (NOV):

According to the Air Quality Program Operations Section, most of the Neiswonger's previous violation cases have been closed except the following two (2) which are pending for further action. These violations were noted during a site inspection on January 25, 2022 and March 21, 2022.

- Operating GP-3 equipment without water sprays; and
- Failure to comply with 40 CFR Part 60 Subpart OOO for opacity standards.

REGULATORY ANALYSIS:

Per 25 Pa. Code §127.11, approval by the Department is required to allow the construction of an air contamination source. The proposed crusher, screens and associated diesel-fired engines meet the definition of *Air contamination source* as defined under 25 Pa. Code §121.1.

New Source Performance Standards (NSPS) from 40 CFR Part 60 Subpart LL – Standards of Performance for Metallic Mineral Processing Plants will not apply to this portable nonmetallic mineral processing plant. Per 40 CFR 60.381, "*Metallic mineral processing plant* means any combination of equipment that produces metallic mineral concentrates from ore." This plant will not crush ore and will not produce metallic mineral concentrate as defined under 40 CFR 60.381.

NSPS from 40 CFR Part 60 Subpart OOO – Standards of Performance for Nonmetallic Mineral Processing Plants will apply to this portable nonmetallic mineral processing plant. Per 40 CFR §60.670(a)(1), "...the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station..." The crusher, screens, and attached belt conveyors included as part of this nonmetallic mineral processing plant will be subject to this subpart. Per 40 CFR §60.671, "*Nonmetallic mineral* means any of the following minerals or any mixture of which the majority is any of the following minerals: (1) Crushed and Broken Stone, including Limestone, Dolomite, Granite... (2) Sand and Gravel..." On-site fill material includes crushed and broken stone which is a listed non-metallic mineral. Applicable requirements from this subpart (as of June 2006) have been incorporated into the Department's GP-3. However, this subpart was last amended on April 28, 2009, and there are some more stringent applicable requirements under Subpart OOO which have not yet been incorporated into GP-3.

Per 40 CFR §60.672(b), and the referenced Table 3 to this subpart, fugitive emissions from screening operations and belt conveyors may not exceed 7% opacity; and fugitive emissions from crushers may not exceed 12% opacity. Demonstration of compliance with these limits is to be performed by conducting initial performance tests and periodic inspection of water sprays. These limits are more stringent than the 10% and 15% opacity limits included under GP-3 Condition 21.

Per 40 CFR §60.674(b), "The owner or operator of any affected facility for which construction, modification, or reconstruction commenced on or after April 22, 2008, that uses wet suppression to control emissions from the affected facility must perform monthly periodic inspections to check that water is flowing to discharge spray nozzles in the wet suppression system. The owner or operator must initiate corrective action within 24 hours and complete corrective action as expediently as practical if the owner or operator finds that water is not flowing properly during an inspection of the water spray nozzles…" This monitoring requirement is applicable to the crusher and is not found in GP-3.

Per 40 CFR §60.676(b)(1), "Owners or operators of affected facilities (as defined in §§60.670 and 60.671) for which construction, modification, or reconstruction commenced on or after April 22, 2008, must record each periodic inspection required under §60.674(b) or (c), including dates and any corrective actions taken, in a logbook (in written or electronic format). The owner or operator must keep the logbook onsite and make hard or electronic copies (whichever is requested) of the logbook available to the Administrator upon request. This recordkeeping requirement is applicable to the crusher and is not found in GP-3.

GP-3 Requirements:

Per GP-3 Condition 2., "Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals:

a. Crushed and broken stone, including limestone, dolomite, granite…
b. Sand and gravel…"

This is the same definition of non-metallic mineral under NSPS Subpart OOO. As stated in the above NSPS Subpart OOO applicability analysis, on-site fill material including crushed and broken stone is classified as a non-metallic mineral, and this facility fits the source category of the GP-3.

Per GP-3 Condition 9, "The authority to operate the portable nonmetallic mineral processing plants at one location would be allowed for:

a. N/A

b. A maximum up to (5) years for plants, which are located at sites for which a valid mining permit or an air quality permit exists for the operation of a nonmetallic mineral processing plant.

A *nonmetallic mineral processing plant* is defined for the purposes of GP-3 as "any combination of equipment that is used to crush or grind any nonmetallic mineral". Similarly, as defined in 40 CFR Part 60 Subpart OOO—*Standards of Performance for Nonmetallic Mineral Processing Plants*, GP-3 defines *portable plant* as "a nonmetallic mineral processing plant that is mounted on a chassis or skids and may be moved by the application of a lifting or pulling force". The proposed crushing plant qualifies for authorization under GP-3 since it is a *portable plant* and

will process *nonmetallic minerals*. Since the Maggie Lynn Quarry possesses a valid mining permit, authorization under GP-3 may be granted for up to 5 years.

Per GP-3 Condition 17.a., "All reasonable actions shall be taken to prevent particulate matter from becoming airborne. These actions include, but are not limited to, the following: i. Proper installation of a water spray dust suppression system and operation in accordance with Condition 18..." The applicant has elected to install and operate a water spray dust suppression system including water sprays on all the equipment which include crushers, vibratory screens, and conveyor belts. Moisture carry over from wet suppression systems is a recognized control option for downstream fugitive emission points (other than crushers)[1] and is expected from properly designed and operated water sprays. Proper operation includes operating water sprays on any and all occasions that the plant is operated except where processed materials contain sufficient moisture so as not to create air contaminant emissions in excess of the limitations and standards of this General Permit, in accordance with GP-3 Condition 18.

Per GP-3 Conditions 21.b. and c., fugitive emissions from the crusher without a capture system are limited to 15% opacity or less and all other fugitive emissions are limited to 10% or less. Both of these limitations take effect within 180 days of initial startup or 60 days of maximum production, whichever is sooner. However, both limitations are superseded by more stringent NSPS Subpart OOO limits of 12% opacity and 7% opacity respectively as noted in the NSPS Subpart OOO applicability section above.

Per GP-3 Condition 23.i., "On and after the sixtieth (60^{th}) day after achieving the maximum production rate at which processing equipment will be operated, but not later than one hundred and eighty (180) days after the initial startup the permittee shall conduct the tests required under 40 CFR §60.11." Method 9 and the procedures of 40 CFR §60.11 are required to be used in addition to the requirements of GP-3 Condition 23.c.

Per GP-3 Condition 25., the permittee is required to submit copies of all requests, reports, applications, submittals, and other communications to both U.S. EPA and the appropriate Regional Office of the Department. The U.S. EPA address provided within the contents of the current GP-3 is incorrect. The current address shall be included on the cover page sent to the permittee with the authorization to use the GP-3.

EMISSIONS AND CONTROLS:

Emission calculations were carried out by the applicant for the crushers based upon AP-42 emission factors from Chapter 11.19.2 and estimated worst case facility-wide operating conditions of 2,000 hours per year and 500,000 tons per year. Controlled emission factors are acceptable because the crushers, screens, and conveyors will be equipped with water sprays. The applicant has added an estimate of emissions from vehicle traffic, the vibratory and non-vibratory screen, and associated material transfer points using AP-42 emission factors from Chapters 11.19.2, 13.2.2, and 13.2.4. The vibratory screen will size the final product and recycle

[1] See *AP-42, Fifth Edition,* Volume I Chapter 11.19.2: Crushed Stone Processing and Pulverized Mineral Processing, Table 11.19.2-1 footnote b, https://www3.epa.gov/ttn/chief/ap42/ch11/final/c11s1902.pdf , p 11.19.2-6.

oversize back to the crushers in a closed loop system. Sized material will be deposited onto a temporary storage pile by a single radial stacker before loading into a truck by a front-end loader. A water truck will be available for use for Neiswonger to operate the crushers water sprays and water the roadway as necessary to prevent fugitive emissions. These additions do not have a regulatory impact in this case and the application's calculations were otherwise found to be acceptable.

On May 20, 2022, the applicant provided a map showing the location of the "water spraying nozzles" and the "water line layout from a sump pit to the processing plant". The three (3) dust suppression spraying nozzles will be located on the Jaw Crusher, Cone Crusher, and Sizing Screen.

The applicant planned maximum annual throughput at this site is based on is 500,000 tons. The unpaved haul road from the active pit to the crusher is 1,500 feet long, or 0.28 miles. The average haul truck stone capacity is 53 tons which equates to 9,434 trucks per year. The maximum estimated operating capacity of the on-site equipment is 255 tph, however, the proposed maximum amount of material to be processed for this operation is 500,00 tons per year.

Emission estimate for PM is summarized below for the following activities and emission factors (E.F.):

1. Unpaved Roadways – E.F. 13.2.2;
2. Aggregate Handling and Storage Piles – E.F. 13.2.4; and
3. Emission Factors for Screening and Crushing Activities – E.F. 11.19.2-2.

Table: 1
Processing Plant Potential Emissions

Sources of Containments	PM Emissions		
	Un-Controlled (tpy)	Control Efficiency	Controlled (tpy)
Unpaved Roadways	27.21	50%	13.61
Drop Operations	5.45	50%	2.73
Crushing	2.70	50%	1.35
Screening Activities	12.50	50%	6.25
Total	47.86	50%	23.93

1. The emission estimate is based on annual throughput of 500,000 tons of processed material.
2. Emissions of drop operation, and hopper loading are calculated per AP-42 Section 13.2.4.
3. Emissions from unpaved roadways are calculated per AP-42, Table 13.2.2 using approximately 9,434 trucks per year entering and leaving facility yielding a daily VMT of approximately 0.56 miles per day.
4. Emissions factors for crushing stone per 11.19.2-2.
5. A control efficiency of 50% is assumed due to availability of water sprays to determine PM emissions.
6. Values may be slightly off due to rounding.

Emission Calculations for PM-10:

The unpaved haul road from the active pit to the crusher is 1,100 feet long, or 0.21 miles. The average haul truck stone capacity is 53 tons which equates to 9,434 trucks per year. The maximum estimated operating capacity of the on-site equipment is 255 tph, however, the proposed maximum amount of material to be processed for this operation is 500,00 tons per year.

1. Unpaved Roadways – E.F. 13.2.2;
2. Aggregate Handling and Storage Piles – E.F. 13.2.4; and
3. Emission Factors for Screening and Crushing Activities – E.F. 11.19.2-2.

Table: 2
Processing Plant Potential Emissions

Sources of Containments	PM-10 Emissions		
	Un-Controlled (tpy)	Control Efficiency	Controlled (tpy)
Unpaved Roadways	6.84	50%	3.42
Drop Operations	4.13	50%	2.07
Crushing	0.60	50%	0.30
Screening Activities	2.23	50%	1.12
Total	13.80	50%	6.91

1. The emission estimate is based on annual throughput of 500,000 tons of processed material.
2. Emissions of drop operation, and hopper loading are calculated per AP-42 Section 13.2.4.
3. Emissions from unpaved roadways are calculated per AP-42, Table 13.2.2 using approximately 9,434 trucks per year entering and leaving facility yielding a daily VMT of approximately 0.56 miles per day.
4. Emissions factors for crushing stone per 11.19.2-2.
5. A control efficiency of 50% is assumed due to availability of water sprays to determine PM emissions.
6. Values may be slightly off due to rounding.

Total controlled PM emissions = 23.93 tpy; and
Total controlled PM-10 emissions = 6.91 tpy

COMPLIANCE:

Fugitive air contaminants from the nonmetallic mineral processing plant shall not at any time exceed the limitations specified in 25 PA Code §§ 123.1 and 123.2. A Water Spray Dust Suppression System shall be located on the crusher and at the transfer points to minimize fugitive emissions. The water spray system must operate at all times the plant is operating unless the material contains sufficient moisture to not create air contaminant emissions in excess of the limitations. A water truck shall be utilized to prevent fugitive emission from becoming airborne

onto any roadways or from material stockpiling. Maximum speed limit on all mining roadway surfaces will be restricted to fifteen (15) miles per hour and will be strictly enforced.

Dust from stockpiles will be reduced by minimizing the height of free fall of material and minimizing wind erosion of stockpile by locating stockpiles behind natural or manufactured windbreaks as noted by the applicant. Any inactive stockpile shall be covered with tarps or other inexpensive materials minimizing wind erosion. Any vehicular traffic on or around the stockpile shall be minimized.

RECOMMENDATIONS and SUMMARY:

Continued operation of the following equipment will be approved after authorization for use of GP3-63-00970F:

- One (1) Primary Jaw Crusher, Model No. Pioneer 3055, manufactured by Astec, rated at 299 tph, and was installed in June 2021. Expected hours of operation are 2,000 hr/yr;

- One (1) Cone Crusher, Model No. KPI-JCI Kodiak, manufactured by Astec, rated at 255 tph, and was installed in June 2021. Expected hours of operation are 2,000 hr/yr. The cone crusher feeds the following stackers:

  a. North Star Equipment 30' x 100' conveyor return feeds to the cone crusher. Capacity 51 tph.
  b. North Star Equipment 30' x 80' stacker feeding #57 pile. Capacity 106 tph
  c. North Star Equipment 30' x 60' stacker feeding #8 pile. Capacity 57 tph
  d. North Star Equipment 30' x 80' stacker feeding #10 dust pile. Capacity 43 tph

- One (1) Vibratory Screener, Model No. JCI 6203-32LP, manufactured by Astec, rated at 410, and was installed in June 2021. Expected hours of operation are 2,000 hr/yr. This Screener feeds three (3) separate radial stackers:

  a. North Star Equipment 30' x 80'- feeding a 2A gravel pile. Capacity 99 tph.
  b. KPI-JCI 13-3680 Radial stacker feeding AASHTO #3 pile. Capacity 107 tph
  c. MEI 42' x 120' radial stacker feeding the cone crusher. Capacity 204 tph

- One (1) Non-Vibratory Screen, Model No. Johnson Crusher, manufactured by Astec, rated at 260 tph, and was installed in June 2021. Expected hours of operation are 2,000 hr/yr; and

- Two (2) Conveyors, manufactured by North Star, rated at 51 tph, and were installed in June 2021. Expected hours of operation are 2,000 hr/yr.

In addition to those required by GP-3, the following federal requirements apply to this facility:

- The Owner/Operator must conduct monthly periodic inspections of the water spray system, and take corrective action as necessary, on any equipment installed or modified after April 22, 2008, to comply with NSPS Subpart OOO.

- The Owner/Operator must maintain records of all inspections of water sprays and any corrective actions taken, to comply with NSPS Subpart OOO.

Neiswonger Construction Inc. shall meet all the requirements of GP-3 and should be allowed to continue to operate of an existing portable nonmetallic mineral processing plant at Maggie Lynn Quarry. I recommend the authorization be granted to use the GP-3 at this location for a period of 5 years from the date of issuance. Additionally, the facility no longer has any equipment operating under GP11-63-00970B, and there are no plans to bring that equipment back to the site; therefore, GP-11-63-00970B will be inactivated in our system.

Neiswonger Construction, Inc.
Underground Mining Operation, SMP 63192001

Module 173f. Noise Study of Pre-Mining and Estimate of mining noise levels

Introduction

The noise assessment as follows was prepared for Neiswonger Construction, Inc. for the future Maggie Lynn underground limestone mining operation. The site is along Morey Road in Deemston Borough, Washington County, about two mile west of Fredericktown borough. The noise assessment was done to get a baseline of noise levels near the future coal mine.

Instrumentation

Noise levels were taken using a Center 322 Type 2, Sound level meter with a datalogger. The equipment has auto ranging from 30 to 130 dBs. The data logger was programmed to take a reading every twenty seconds.

Testing Conditions

Testing was conducted on Thursday, May 25, 2023, from 9:30 am until 3:00 pm. Weather for the testing timeframe was between 53°F and 65°F, with winds of 5 to 10 mph. During testing it was mostly sunny.

Testing Control Locations

A summary of the result of the testing are as follows:

1. East Bethlehem Church. A Small Church property about 2,500' northeast of the current mining area. The church property sits almost 40' in elevation above the top to the pit in the current mining area, but there is a ridge between the two that peaks at approximately 110' above the mine site (70' in elevation above the church).

2. Earl and Tracy Gilpin Property. This property sits at the top of the pit in the current mining area. It is approximately 3,000 from the mining pit but is within 300' of the haul road.

3. End of Pump Station Road. This location is about 30' in elevation below the bottom of the existing pit and is 1,300 feet away from the nearest location of the main pit. The location is at the end of the township road and is next to the boundary that defines the remaining road as a private drive servicing two property owners. The testing site is separated from the mining operation by some tree line, but most of the area between the two locations is open field.

4. Computer Country Doctor – 203 Pump Station Road. The home on the property is approximately 1,640' from the main pit and 110' above the bottom pit. The pit is openly visible from the property. There are tree rows between the home and the mining operation, but the elevation change allows for the property owner to see most of the mining operation.


GEI
GEOTECH ENGINEERING, INC.
ENGINEERS SURVEYORS GEOLOGISTS
1
East Bethlehem Church
East Bethlehem Church
Leonard Rd
Morey Rd
2
Earl and Tracy Gilpin
Neiswonger Construction
T648
3
End of Pump Station Raod
Pump Station Rd
Pump Station Rd
4
Computer County Doctor
Computer Country Doctor
S/2041

Testing Results

A summary of the result of the testing are as follows:

1. East Bethlehem Church. At this location the logger was also situated about 16' above the road in elevation. The main road (SR2024) at this location runs downhill from east to west. This was very noticeable in the testing as vehicles going uphill were louder than the cars coming downhill. The road averaged a single vehicle about every three minutes. The sound constantly varied from 38 to 44 dbs with the variance in sound being a handful of birds in the area. Vehicles consistently showed in the 60 to 70 db range with trucks going uphill making the high end of the scale. The highest single recorded sound was a garbage truck that stopped at a house just across from the data logger. It recorded 80.3 db. The crushing plant at Maggie Lynn was in operation while testing was going on, but at this location could not be heard.

2. Earl and Tracy Gilpin Property. The logger was set up on the top of a concrete block pillar that sits 40 feet from the East side of Morey Road. At this location you are 270' North of the haul entrance of the Maggie Lynn mine. The ambient sound levels were dictated by birds and vehicle traffic. The road averaged a single vehicle about every 2.25 minutes. The ambient levels were consistently in the high 30's to low 40's range except for vehicle traffic, which ranged from 60 to 68 dbs when passing the site. It is noted a truck that left the Maggie Lynn quarry turning South onto Morey Road (the truck was never closer than 270' to the logger). The truck had a level of 53.2 db. The highest sound volume achieved during testing was 71.7db for a truck that was breaking to turn into the entrance of the haul road.

3. End of Pump Station Road.. The crushing operation at the Maggie Lynn operation is the dominating noise at this location. The birds are only noticed as you listen for them. The crushing plant works at two separate noise levels as it varies with what appears to be the main conveyor belt. When that belt is operating the plant runs about 7 db higher at the logger location than when it is not.

4. Computer Country Doctor – The sound levels at this location which is higher in elevation and about 250' further away from the testing done at location 3, mirrors the same results with one exception. The readings consistently run about 6 decibels lower. The increased noise of the conveyor belt is noticed just as it is at location three, but it is not as loud.

Table 1. Sound Test

Meter ID Shown on Map	Location	Distance to the Nearest edge of the Mining Pit	Low Decibel Reading (dB)	High Decibel Reading (dB)	Typical Db Reading During Test
1	East Bethlehem Church	2,680	36.4	80.3	42.0
2	Earl and Tracy Gilpin	3,190	35.9	70.4	41.0
3	End of Pump Station Road	1,340	44.8	63.8	49.0 or 56.5
4	203 Pump Station Road	1,590	39.5	56.4	42.7 or 50.0

Estimated Noise Levels from the Proposed Mine Operation

Noise levels from the Maggie Lynn operation shall be minimally different than the noise levels generated by the current above ground mining operation. The daily sound volume at the operation is dictated by the crushing operation. The sound study shows that on the western side of the operation, away from the highwall the sound carries and is noticeable along the homes of Pump Station Road.

This will not change with the installation of the underground operation. What will change is the blasting associated with the underground mine as it moves further from the surface operation and further underground. This volume will decrease with time.

Noise level projections that are anticipate with an above ground mine and have been confirmed with the sound survey are in line with a study entitled "Air Overpressure" written by P.K Singh, M. Klemenz and C. Niemann-Delius who were with the Institute of Mining Engineering and the institute of Technical Acoustics at Aachen University, Germany.

Studies have shown that typical construction sites where solid material is being broken up by equipment have an average sound of between 80 to 85 dB with maximums during the day of close to 100 dB. The equivalent sound for these levels would be a blender or a power lawn mower. For site workers prolonged exposure to these noise levels can cause permanent hearing loss. Workers in these areas will wear headsets to reduce the health impact.

Regarding on site blasting. The site is mostly isolated and the typical noises that will emanate from the site will likely not be heard by those in the local community outside of the four homes on Pump Station Road, where blasting will be easily heard. Blast warning signals start 5 minutes prior to blasting conclude within one minute of the use of explosives. A final prolonged warning signal occurs once the area of blasting has been inspected and everything is deemed safe. US Office of Surface Mining and Reclamation Enforcement specify a safe overpressure of 133dB for impulsive air blast when recording is accomplished with equipment having a frequency range response of at least 2–200Hz. They further reported that an impulsive event sound level of 140dB represents a reasonable threshold for glass and plaster damage.

If noise is free to spread out in all directions without outside interference, its intensity will decline with the inverse square law. A noise that is 100 dB at one meter will have an intensity of only 1/100 as much at ten meters. That's 2 bels, or 20 decibels less since a bel corresponds to a factor of ten. So, at 10 meters the sound is 80 dB. At 100m the intensity is down to 60 dB, and so on. Based on this and if there are no other external factors a 130 dB blast will still have an equivalent sound of approximately 100 dB at the nearest home along Pump Station Road, but the blast will also be able to be heard as far as 60 miles away.

As was noted in the sound study the homes of Deemston will have little impact from any noise associated with the mining operation with the exception of the loudest blasts. The homes west of the operation will continue to have some audible impact based off the noise associated with the ongoing mining at the Maggie Lynn Quarry.