

Module 16: Large Noncoal Blast Plan

(Chapter 211/§§ 77.561/77.562/77.563/77.564)

- New
- Revised

Permittee Ligonier Stone & Lime Company
 Permit No. new
 Mine Name SMT East Surface Mine
 County Westmoreland
 Township Derry

Blasting Contractor Senex Explosives, Inc.

Blasting Contractor ATF Permit License No. 8-PA-003-20-2E-00591

An application for proposed blasting shall contain a blasting plan for the proposed permit area, explaining how the applicant intends to comply with §§ 77.561-77.565 (relating to use of explosives) and including the following; drilling patterns, including size, number, depths and spacing of holes, charge and packing of holes, types of initiation and detonation controls, sequence and timing of firing holes, and scaled distance. Persons responsible for blasting operations at a blasting site shall be familiar with the blasting plan and site-specific performance standards (25 Pa. Code Chapter § 77.453).

A permit issued under the Noncoal Surface Mining and Conservation and Reclamation Act (52 P. S. §§ 3301-3326), and the regulations promulgated thereunder (25 Pa. Code Chapter 77), authorizing blasting activity shall act as a blasting activity permit issued under 25 Pa. Code Chapter 211. An application for a blasting activity permit shall be prepared by a blaster and shall include information needed by the Department to determine compliance with applicable laws and regulations and conditions necessary to ensure that the proposed blasting activity complies with the applicable statutes and 25 Pa. Code Chapter 211. (25 Pa. Code Chapter § 211.121, 25 Pa. Code Chapter § 211.124).

Sections 16.1 through 16.11 and Sections 16.13 through 16.17 must be submitted with the permit application. Section 16.12 (relating to public notice of blasting schedule) must be submitted prior to blast plan approval. There shall be no blasting until a blast plan has been approved by the Department.

There is a fee required under 25 PA Code Chapter § 77.106 for each blast plan application. The fee is \$475. Is the fee being submitted with the application?

- Yes (\$550) No

16.1a Blast Loading Plan 1 (§ 77.453)

	Hole DIA.	MAX # HOLES	MAX # ROWS	BURDEN		SPACING		HOLE DEPTH		STEMMING	
				MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	TYPE
A	6 3/4"	200	15	10'	22'	10'	22'	15'	50'	9'	Competent drill cuttings
B	6 1/4"	200	15	9'	18'	9'	18'	9'	50'	8'	Competent drill cuttings
C	5 1/2"- 5 7/8"	200	15	7'	15'	7'	15'	7'	50'	6'	Competent drill cuttings
D											
E											

Maximum explosives weight per delay (less than 8ms) 2280_ Minimum Scaled Distance 21_____

Specific Type of Explosives Cast boosters, ammonium nitrate fuel oil emulsion blends and sensitized emulsion____

Method of blast initiation Electric Non-Electric Other

Explain Other Digital_____

Comments:

A	<p>The following applies to 16.1a - A, B and C - Overburden shots:</p> <p>If blasting is to occur near or proceeds towards dwellings or structures, discretion will be used to maintain a minimum scaled distance of 21 or more. The pounds per delay, hole diameters, number of holes per pattern, spacings, burdens, hole depths and amount of stemming will be adjusted to prevent flyrock and maintain acceptable vibration and air blast levels.</p> <p>Crushed stone stemming will be used at blasters discretion.</p> <p>As part of this blast plan future requests may be made to the Department for adjustments to be made in the criteria listed in 16.1a. These requests will be based on site specific conditions, seismograph readings or other information requested by the Department.</p>
B	
C	
D	

E	
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16.1b Blast Loading Plan 2 (§ 77.453)

	Hole DIA.	MAX # HOLES	MAX # ROWS	BURDEN		SPACING		HOLE DEPTH		STEMMING	
				MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	TYPE
A	5 1/2"	150	10	8'	16'	8'	16'	8'	25'	6 1/2'	Competent drill cuttings
B	5"	150	10	7'	15'	7'	15'	6'	25'	6'	Competent drill cuttings
C	4 1/2"	150	10	6'	14'	6'	14'	6'	25'	5'	Competent drill cuttings
D	4"	150	10	5'	14'	5'	14'	5'	25'	4'	Competent drill cuttings
E	3" - 3 1/2"	150	10	5'	14'	5'	14'	4'	25'	3'	Competent drill cuttings

Maximum explosives weight per delay (less than 8ms) 850___ Minimum Scaled Distance 21___
 Specific Type of Explosives Cast boosters and ammonium nitrate fuel oil emulsion blends and sensitized emulsion
 Method of blast initiation Electric Non-Electric Other
 Explain Other digital_____

Comments:

A	<p>The following applies to 16.1b - A, B, C, D, and E - stone shots: If blasting is to occur near or proceeds towards dwellings or structures, discretion will be used to maintain a minimum scaled distance of 21 or more. The pounds per delay, hole diameters, number of holes per pattern, spacings, burdens, hole depths and amount of stemming will be adjusted to prevent flyrock and maintain acceptable vibration and air blast levels.</p> <p>As part of this blast plan future requests may be made to the Department for adjustments to be made in the criteria listed in 16.1b. These requests will be based on site specific conditions, seismograph readings or other information requested by the Department</p> <p>Use of non-production holes of limited diameter and depth to be referred as "satellite holes": Satellite holes will be limited to a maximum diameter of 3 1/2" with a minimum depth of 4' and a maximum depth of 7' with a minimum stemming of 3 1/2' in the 4' holes, 4 1/2' in the 5' holes, 5' in the 6' and 7' holes. These holes will be used in stone shots only and will be drilled between rows of full depth production holes. These holes will be shot along with the full depth production holes with the contents of these holes being considered as part of the total number of holes and the total pounds/delay on the blast reports. Because the use of satellite holes will vary on a per shot basis the number of these holes will not be considered as part of the limitations listed in Section 16.1b for full depth production holes.</p>
B	

C	
D	
E	

16.2 Peak Particle Velocity and Airblast Limits (§§ 211.151 (c),(d))

Blasts shall be designed and conducted to meet the maximum allowable peak particle velocity indicated by Figure 1 of 25 PA Code Chapter 211.151 (c) and not exceed the noise levels specified in Table 1 of 25 PA Code Chapter 211.151 (d) at the closest building not owned or leased by the permittee or its customer.

The Department may establish an alternative peak particle velocity or airblast level if it determines that an alternative standard is appropriate or if the owner and lessee, if leased to another party, of a structure located on the permit area have each signed a waiver releasing the vibration limit. The waiver shall be clear, knowing and specific. (attachment(s) **NOTE: Additional review time will be necessary if the applicant submits a waiver for an alternative peak particle or airblast limit at a structure.**

16.3 Will the sequence and timing of hole detonation be determined by considering factors such as geology, direction and proximity of homes or other structures, permit boundaries, or the locations of underground or overhead utilities. (§ 77.453) Yes No

16.4 Will the loading of holes be determined by considering factors such as geology, direction and proximity of homes or other structures, permit boundaries, or the locations of underground or overhead utilities. (§ 77.453) Yes No

16.5 Blasting near Dwellings, Public Buildings or Schools (§ 77.564(g)(3))

Will blasting occur within 1,000 feet of any dwelling, public building or school? Yes No

Indicate distance to the nearest dwelling or structure, neither owned nor leased by Permittee, from the area where blasting will occur. 300 feet

16.6 If blasting will occur within 1,000 feet of any public building or school, explain how notification required by 25 Pa Code § 77.564(g)(3) will be made.

The owners or the management of any commercial buildings located within 1000' of the blasting will be notified before any blasting begins and prior to each blast.

16.7 Will blasting be conducted within 300 feet of an occupied dwelling? (§ 77.564(g)(4)) Yes No

16.7a If blasting is proposed within 300 feet of an occupied dwelling provide a notarized written waiver from the owner each dwelling specifying the distance blasting may occur to the dwelling (**Note:** If the waiver includes an increase in the peak particle velocity limits or in the airblast limits, in 25 Pa Code Section 211.151(c) and (d), the alternative limits must be specified in the waiver). (Attachment) (§ 77.564(g)(4))

16.8 Will blasting will be conducted within 800 feet of any public road? (§ 77.564(g)(1)) Yes No

16.8a If blasting will be conducted within 800 feet of any public road describe the precautions that will be taken to protect the travelling public (can be submitted as an attachment): (§ 77.564(g)(1))

When blasting within 800 feet of a public roadway, the operator intends to temporarily stop traffic on the public highway when the blasting occurs. This stoppage should be very short in duration and will be coordinated by the operator and the contract blaster. The traffic control plan will be conducted as outlined in PennDOT publication 213.

Alternative method to blocking the public highway when blasting between 500 feet and 800 feet of a public highway:

1. Crushed stone stemming will be used.
2. The distance and location to public highways will one of the factors considered by the blaster when determining the sequence and timing of hole detonation.
3. Shot will be videotaped for in-house use only and kept for 14 days.
4. Both overburden and stone shots will have a maximum of 4 rows of full depth production holes.

16.9 Blast Area (§§ 77.564(d)(1), 77.564(e))

Describe how the blast area as defined in 25 Pa Code Section 211.101 will be determined, the procedures for notification of all persons who may have access to the blast area, and how the blast area will be secured and safeguarded (can be submitted as an attachment):

The blast area is identified as the area around the blast site that will be cleared prior to the blast to prevent injury to persons and damage to property. The blast area shall only be accessed by approved personnel. The blaster-in-charge shall insure that all persons are sufficiently out of the blast area prior to any audible blast warnings and the detonation of the blast:

1. Ensure that all excess explosives have been removed from the blast area and are located in a safe area.
2. Inspect the blast site to ensure that are proper and adequate.
3. Ensure the blast area is cleared and safeguarded.
4. Prior to the warning signal, confirm with mine foreman that all persons and equipment have been removed from the blast area.
5. Ensure that the necessary precautions are in place to protect the public on public roads.
6. At least 1 minute but not more than 2 minutes prior to detonation, sound a warning signal of 3 blasts, each lasting approximately 5 seconds. The warning signal shall be sufficient power to be heard 1/2 mile from blast site.
7. After the blast has been detonated, no one may return to the blast area until all smoke and fumes have dissipated.
8. After the smole and fumes have cleared, the blaster-in-charge shall return the blast site to ensure that it is safe with respect to the blasting activity.
9. The blaster-in-charge shall determine if a misfire occurred and take actions to render the blast site safe.
10. Special attention shall be given the determine if primers or other explosives are present in the muck pile.
11. After the blaster-in-charge has determined the blast area is safe, the blaster-in-charge shall sound an all-clear signal, consisting of 1 long blast, lasting approximately 10 seconds. This all-clear signal shall be of sufficient power to be heard 1/2 mile from the blast site.

16.10 Underground Mines (§ 77.551)

Will blasting occur within 500 feet to any point over or adjacent to an active or abandoned portion of an active underground mine? Yes No

If yes attach completed MSHA form. (*Attachment*)

16.11 Underground Utility Lines: (§ 211.181-182)

Will blasting be conducted within 200 of feet Underground Utility Lines? Yes No

If underground utilities are located within 200 feet of the area where blasting will occur, attach a copy of the notification sent to the owner(s) (submit as an attachment).

If there are any requests for waiver of any of the provisions of 211.182 attach copies of any agreements with the owner(s) of the utilities (submit as an attachment).

16.12 Streams (§ 73 P.S. s 166(d))

If blasting will occur within 100 feet of any streams, identify the stream and indicate the distance blasting will occur from the stream.

Stream: N/A Distance: N/A

16.13 Public Notice of Blasting Schedule (§ 77.563)

Submit the following to the Department prior to the initiation of blasting.

- a) A Copy of the public notice of the blasting schedule that is published in a newspaper of general circulation in the locality of the area where blasting will occur (submit as an attachment)
- b) A List of the Local governments and public utilities that are located within 1,000 feet of the area where blasting will occur, who received copies of the blasting schedule. (**Note:** These shall be sent a copy of the blasting schedule.) (submit as an attachment)

16.14 Explosive Storage (§ 87.65(a)(11))

Will explosives be stored within the proposed blasting area? Yes No

If "yes" provide current explosives storage security plan number. _____

If no explain the disposition of explosives materials used for this project.
U.S.D.O.T regulations will be followed. Explosives materials will be transported to the site the day of the blast and returned to a state and federal licensed storage facility.

16.15 Blast Plan Preparer (§ 211.124(a))

The PA licensed blaster who prepared this application must print and sign name below. (General or Surface Mining Authorization Only)

Licensed Blaster Alex J. Senules III _____
Print

Licensed Blaster  _____
Sign

Date 12-2-2020 Blaster's license Number BL-4242

(General or Surface Mining Authorization)

16.16 Permittee Authorization Representative (§ 77.107)

The permittee or an authorized representative of the permittee must print and sign name below.

Permittee or Authorized Representative David S. Herrholtz _____
Print

Permittee or Authorized Representative _____

[Handwritten Signature]

Sign

Date _____

12-5-2020

16.17 Map (attachment-delineates where blasting will occur and the area within 1,000 feet of where blasting will occur.) (If explosives are going to be stored on the mine site, the location of the explosives storage must be included on the map.) The map should accurately show, at a minimum, permit boundaries, the locations of streams, gas wells and lines, other underground utilities, overhead utilities and the nearest dwellings and other structures. (§§ 211.124(7)), (77.454(a)(9))

16.18 List of attachments (Check all that apply)

- Dwelling Waiver
- Road Precaution Description
- Blast Area Security Plan
- MSHA Form
- Utility Notification
- Blast Schedule Public Notice
- Map
- Other _____
- Other _____

Department Use Only:

DEP Blasting Inspector _____
Print

DEP Blasting Inspector _____ Date _____
Sign

Recommendation - Approval Disapproval

Comments: