

APPENDIX K

THE WV BLASTERS CERTIFICATION EXAMINATION

THE WV BLASTER'S CERTIFICATION EXAMINATION

TRAINING & SELF-STUDY EXAM PREPARATION

The applicant seeking blaster certification from the State of West Virginia must pass a three part examination administered by the West Virginia Office Of Explosives and Blasting (OEB). The exam tests the blaster's knowledge on both explosive application and blasting regulations. To assist the applicant in preparing for the exam, WVOEB has developed this study guide which contains all information required by the exam.

Appendix I contains sample questions to assist in preparation. The answers to these questions can be found in Appendix J. If the applicant determines a lack of knowledge to certain questions, the details for determining the answers can be obtained from the respective chapter in the study guide. Unless the applicant attends an approved eight (8) hour training class (see below), he/she must complete the questions as evidence of preparation for the examination.

Periodically WVOEB or other persons approved by them, offer an eight (8) hour training course to assist applicants in preparation for the examination. The course is recommended for applicants with limited technical and regulatory experience in blasting. If interested in attending a training course, call the WVOEB to determine the next available class. Attendance of the training class will void the above requirement that the applicant complete the study guide questions as evidence of preparation, however the training class is a recommended review of the self study guide material should and individual wish to do both.

ABOUT THE CERTIFICATION EXAM

If the applicant holds a Surface Mine Blaster's Certification with another state holding a reciprocity agreement with West Virginia, the applicant may apply for certification without taking the examination.

Prior to submitting an application, applicants for certification should insure they meet all criteria set forth in Title 199 CSR 1, Section 4 (Appendix A), which include experience and personal qualifications and training or self-study requirements described above.

Title 199, CSR 1, Section 4 (Appendix A) provides a description of the contents of the examination:

4.3 (b) Examination for certified blaster shall include information presented in the Study Guide for West Virginia Surface Mine Blaster's and shall consist of three (3) parts:

- (1) Written multiple choice examination covering:
 - (a) Types of explosives and their properties, to include selections;
 - (b) Blasting equipment and accessories, to include blasting machines;
 - (c) Blast dimensions and calculations, to include geologic and topographic considerations, blast hole design, flyrock control, secondary blasting, and blast plans;

- (d) Delay systems, to include pattern design, field layout, and initiation systems;
- (e) Timing;
- (f) Blast vibration and vibration control, to include airblast, monitoring techniques, and use of pre-blast surveys;
- (g) Loading and shooting, to include priming, scheduling, site control, warning signals, and unpredictable hazards;
- (h) Storage and transportation of explosives;
- (i) Record keeping and reporting;
- (j) Current State and Federal laws and regulations relating to the use, storage, and transportation of explosives; the training and certification of blasting personnel, and blasting signs;
- (k) Responsibilities of a certified blaster.

(2) And a simulation examination whereby the applicant must correctly and properly complete a blasting log.

(3) And other portions or parts developed to demonstrate an applicants ability to use explosives products and equipment properly, as deemed appropriate by the Secretary.

(b) A score of 80 percent (80%) for part (1), and a "passing grade" on parts (2) and (3), which are graded on a pass/fail basis, are required for successful passage of the examination.

(c) Notification of Scores -- The OEB will notify all persons of their scores within thirty (30) days of completing the examination. A person who fails to achieve a passing score of any of the parts of the examination may apply, after receipt of his or her examination results, to retake the entire examination or any portions that the individual failed to pass.

Any person who fails to pass the exam on the second attempt must certify that he/she has taken or retaken the training course described in subsection 4.2 of this rule prior to applying for another examination.

TAKING THE EXAMINATION

For many taking an examination, such as the WV Blaster's Certification Examination, is a nerve racking, agonizing experience. If applicants has prepared by utilizing a training course and/or this self study guide, they should have no problem passing the examination. The average applicant completes the examination in about 2 to 3 hours. A few helpful hints follow:

PERSONAL PREPARATION

You should prepare yourself mentally and physically for the exam. Get a good nights sleep and a morning meal before taking the examination. Enter the exam, refreshed, relaxed and calm. Do not consider the outcome of the exam as life or death. If you follow these preparation suggestions and you have completed the required training or self study, like those before you, the answers to the test will come easy.

WHAT TO BRING

Wear comfortable clothes. A portable calculator (may not be programmable) is recommended for use in taking the exam. The applicants should be familiar with the calculator that they plan on using on the exam as well as the functions of the calculator. The applicant will need no other materials.

MULTIPLE CHOICE

Part of the Surface Mine Blaster's Certification Examination is multiple choice, so it is important that you know how to effectively take such an exam. You will be given an Exam Booklet containing the multiple choice exam questions and an answer sheet on which you will mark your selected answer. You are not to mark in the Exam Booklet, only on the scratch paper and the answer sheet provided. You must obtain a score of 80% or higher to pass this portion of the exam. There is no time limit, you may take as long as you like to finish the multiple choice question portion of the exam.

IMPORTANT RULES TO REMEMBER:

- (1) Make sure that the number of the question corresponds to the number on your answer sheet. If you mark your answer in beside the wrong number, you may find that all the answers are misaligned and would be counted wrong.
- (2) Read all the answers before you choose an answer . Sometimes there may be two answers that are correct, but one is more complete or better in some way. Never make a decision until you have looked at all the answers. As an example, the answer (d) may say "all of the above". Answers (a), (b), and (c) are correct, but (d) is the best answer.
- (3) If you come to a question you are not sure about, do not worry about answering the question immediately. Skip that question, and insure you skip the corresponding answer number on your answer sheet, and continue on to the next question. Often the answer to that question or something that will spark the answer to that question may be found in some other part of the exam. You do not have to answer the questions in any order.
- (4) Once you have chosen an answer, darken in the correct space on the answer sheet completely. For example,

Question (Exam Booklet): 14. ANFO is:
(a) a Class "A" explosive
(b) a detonator
(c) a blasting agent
(d) a tool for determining hole depth

Answer (Answer Sheet): 14.
A B C D

Because the answer sheets are electronically graded, you must insure that the box is completely darkened. Placing an X on the answer space or drawing a circle around it will not be graded correctly by the electronic equipment. Also if you change your answer, insure that you carefully and completely erase the old answer. If two answers are marked, the answer will be graded as incorrect.

(5) Review your work carefully. There is no time limit, so take all the time you need. be sure every question is answered. There is no penalty for guessing, so try to answer every question. If you determine that two of the answers to a question are incorrect, you have a 50% chance of getting the right answer by guessing between the other two.

HANDS-ON EXAM

Part of the Surface Mine Blaster's Certification Examination is the "Hands-On Examination" The applicant may choose between electric or non-electric initiation. This choice must be made prior to taking this portion of the exam. This is the only timed portion of the test. The applicant has fifteen (15) minute to complete this portion of the exam. Most persons finish in eight minutes or less so do not panic. This portion of the exam is pass/fail.

For the "Electric Hands-On", the applicant is required to wire, test, and detonate a simulation board representing a twenty (20)hole blast. The instructor will dictate the wiring configuration (series or parallel series) to be use and may disable some of the detonators (simulating broken leg wires. Using a Blasters Ohmmeter, the applicant must successfully detonate the blast. A proven step by step procedure follows. This procedure works in the field as well as on the exam.

- o Test the blaster's ohmmeter by short circuiting a wire across the terminals
- o Test each cap individually with meter (simulates test before stemming)
- o Bad caps - shunt and mark (wrap around light)
- o Connect series circuits (one series, two series, three series, etc.)
- o If more than one series, balance each series as close as possible (same number of caps)
- o Test each series circuit with meter
- o Test all connecting wire used with meter (simulates testing of firing line)
- o If more than one series, connect series in parallel
- o Visually check your parallel series hook-up
- o Test the parallel series circuit with the meter
- o Connect the two lines to the simulated blasting machine
- o Press and hold the charge button until the "fire ready" light comes on.
- o Continue to hold the charge button and press the fire button
- o All caps connected in the circuit should light (bad caps, step 3, should not be connected and will not light)

For the "Non-electric Hands-On", the applicant is shown a non-electric blast with the surface delays connected. The applicant must examine the surface delays hook-up and determine the many mistakes that exist. He must make the necessary corrections to insure that when the blast is detonated, it will function properly. Items to look for are:

- o Insure timing is correct
- o Insure connections are secure
- o Insure connections are per accepted standards
- o Insure units are not connected in reverse direction
- o Insure all holes are connected in the shot
- o Insure that no components are damaged
- o When all corrections are made, simulate detonation of blast

BLASTING LOG

Part of the Surface Mine Blaster's Certification Examination is the correct and accurate completion of the West Virginia Blasting Log. The applicant has the choice of a blast initiated with either an electric or non-electric system. This choice is made prior to taking this part of the exam. This portion of the exam is pass/fail. There is no time limit, you may take as long as you like to finish the blasting log portion of the exam.

The applicant will be given a blast scenario similar to those found in Chapter 8 and in the self-study Questions in Appendix I. He/she must complete the blasting log for the blast presented. All blanks must contain information. Use of the guidelines that follow will assist in successfully completing this portion of the exam.

- o Familiarize yourself prior to the test with the layout of the WV Blasting Log
- o Read the exam scenario starting at the top and continuing step by step to the end
- o Fill in the blanks on the log as you read along in the exam scenario
- o Do not attempt to fill in the log in order while trying to find the answers in the exam scenario. You will find this more confusing and you may miss information.
- o Copy timing diagram to from the exam scenario to the sketch area
- o Determine the delay overlaps less than 8 ms from the timing diagram
- o Complete mathematical calculation:
 - > Total weight of explosive
 - > Maximum weight of explosive allowed by scaled distance
 - > Maximum weight of explosive used per delay period
 - > Weight of explosive used per hole
- o Add north arrow and direction arrow and distance to nearest structure to sketch
- o Check to insure all information is transferred to Blasting Log
- o Fill in data blanks not required by exam scenario with "N/A" (not applicable)
- o Recheck your Blasting Log again. All data spaces must have some input.

GOOD LUCK!!!

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF EXPLOSIVES AND BLASTING

APPLICATION FOR RENEWAL OF SURFACE COAL MINE BLASTER

PERSONAL INFORMATION				
(Type or Print)				
Name	_____	_____	_____	_____
	Last	First	Middle	
Mailing Address	_____	_____	City	State _____ Zip _____
Telephone No.	_____	Driver's License No.	_____	Date of Birth _____
E-Mail Address	_____			
Current Employer	_____			
Start Date of Employment	_____	Employer Telephone No.	_____	
Surface Coal Mine Blaster Certification No.	_____	Expiration Date	_____	

Surface Coal Mine Blaster Certification renewal requires the following:

1. Completed renewal application form.
2. \$30.00 fee (cash, certified check, money order or company check made payable to WVDEP. *No personal checks accepted*).
3. Documentation of one year (240 work days) of active blasting experience in the last three (3) years.
4. Legible copy of driver's license or photo identification.
5. Documentation of completion of twelve (12) hours refresher training within the last three (3) years from a program or combination of programs approved by this office. The documentation submitted must show total hours attended. OEB provides a twelve (12) hour refresher training program annually in April. For programs that OEB has approved see the OEB web site at www.wvdep.org or contact the office. OEB will accept four (4) hours credit for the completion of the OEB four (4) hour self-study refresher training program. (Program must be purchased individually from OEB for \$25.00. Consists of a video and a series of worksheets that will be graded. Must score at least 80% to receive credit.)

The following questions must be answered with a "YES" or "NO" in the box.

1. Are you a fugitive from justice?	
2. Are you an unlawful user of, or addicted to, alcohol, marijuana or any depressant stimulant, or narcotic drug, or any other controlled substance?	
3. Have you ever been convicted in any court of a felony, or any other crime, for which the judge could have imprisoned you for more than one year, even if you received a shorter sentence, including probation?	
4. Are you under indictment or information in any court for a felony, or any crime, for which the judge could imprison you for more than one year?	
5. Have you ever been adjudicated mentally defective (which includes having been adjudicated incompetent to manage your own affairs) or have you ever been committed to a mental institution?	
6. Have you ever renounced your United States Citizenship?	
7. Are you an alien in the United States? If "YES," attach an explanatory statement showing that you are a lawful permanent resident. (Generally, if you are an alien you cannot possess explosive materials.)	

.....
I hereby affirm and attest that the information provided by me is accurate and complete to the best of my knowledge.

Applicant Signature

Subscribed and sworn to before me, a Notary Public in and for _____ County, in the State of

_____, this _____ day of _____.

Notary Signature

My Commission Expires _____

WV CODE 22-3-17(I): Any person who knowingly makes any false statement, representation or certification, or knowingly fails to make any statement, representation or certification in any application, petition, record, report, plan or other document filed or required to be maintained pursuant to this article or rules promulgated pursuant thereto, is guilty of a misdemeanor and, upon conviction thereof, shall be fined not less than one hundred dollars nor more than ten thousand dollars, or imprisoned in the county jail not more than one year, or both fined and imprisoned.

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF EXPLOSIVES AND BLASTING

APPLICATION FOR INITIAL SURFACE COAL MINE BLASTER

PERSONAL INFORMATION			
(Type or Print)			
Name			
	Last	First	Middle
Mailing Address		City	State Zip
Telephone No.		Driver's License No.	Date of Birth
E-Mail Address			
Current Employer			
Start Date of Employment		Employer Telephone No.	

Surface Coal Mine Blaster Certification requires the following:

1. Completed initial application form.
2. \$50.00 application fee (cash, certified check, money order, company check made payable to WVDEP. No personal checks accepted).
3. Documentation of one year (240 work days) of active blasting experience in the last three (3) years.
4. Legible copy of driver's license or photo identification.
5. Digital photo taken by OEB personnel.
6. Completed self-study questions, Appendix I, including the Blaster's Certification Affidavit. (Self-Study Guide is available from OEB for \$25.00.
7. Take and pass all three (3) parts of examination for certified blasters.

***NOTE:** OEB offers an eight (8) hour training class to review and correlate with the self-study guide. The eight (8) hour training class is mandatory if applicant fails the exam twice. Prior registration is required. The application must be submitted ten (10) days prior to the exam in order to allow adequate time to verify information.

The following questions must be answered with a "Yes" or "No" in the box.

1. Are you a fugitive from justice?	
2. Are you an unlawful user of, or addicted to, alcohol, marijuana or any depressant stimulant, or narcotic drug, or any other controlled substance?	
3. Have you ever been convicted in any court of a felony, or any other crime, for which the judge could have imprisoned you for more than one year, even if you received a shorter sentence, including probation?	
4. Are you under indictment or information in any court for a felony, or any crime, for which the judge could imprison you for more than one year?	
5. Have you ever been adjudicated mentally defective (which includes having been adjudicated incompetent to manage your own affairs) or have you ever been committed to a mental institution?	
6. Have you ever renounced your United States Citizenship?	
7. Are you an alien in the United States? If "YES," attach an explanatory statement showing that you are a lawful permanent resident. (Generally, if you are an alien you cannot possess explosive materials.)	

I hereby affirm and attest that the information provided by me is accurate and complete to the best of my knowledge.

Applicant Signature

Subscribed and sworn to before me, a Notary Public in and for _____ County, in the State of

_____, this _____ day of _____.

My Commission Expires _____

Notary Signature

WV CODE 22-3-17(I): Any person who knowingly makes any false statement, representation or certification, or knowingly fails to make any statement, representation or certification in any application, petition, record, report, plan or other document filed or required to be maintained pursuant to this article or rules promulgated pursuant thereto, is guilty of a misdemeanor and, upon conviction thereof, shall be fined not less than one hundred dollars nor more than ten thousand dollars, or imprisoned in the county jail not more than one year, or both fined and imprisoned.

ACTIVE BLASTING EXPERIENCE VERIFICATION

Check all areas that apply to your blasting experience in the following areas of active work or supervision on a blasting crew:

<input type="checkbox"/> handling	<input type="checkbox"/> loading	<input type="checkbox"/> wiring
<input type="checkbox"/> transportation	<input type="checkbox"/> explosives detonation	<input type="checkbox"/> seismograph
<input type="checkbox"/> supervising	<input type="checkbox"/> explosives inventory	<input type="checkbox"/> blast design

List below the total number of days you have active blasting experience working on a blasting crew, or supervising a blast crew during the last three (3) years at surface coal mines or surface areas of underground coal mines.

NUMBER OF DAYS WORKED AS A BLASTER IN LAST 3 YEARS? () days

This is to certify that _____ has worked _____ days performing blasting related work as described above at:

Name of Company

Address of Company

Dates of Experience with Company From _____ To _____

ATF License/Permit No. listing employee as an employee possessor or responsible person. _____

Name and Title of Company Representative Company Telephone No.

Signature of Company Representative Date

NUMBER OF DAYS WORKED AS A BLASTER IN LAST 3 YEARS? () days

This is to certify that _____ has worked _____ days performing blasting related work as described above at:

Name of Company

Address of Company

Dates of Experience with Company From _____ To _____

ATF License/Permit No. listing employee as an employee possessor or responsible person. _____

Name and Title of Company Representative Company Telephone No.

Signature of Company Representative Date

Please submit application to:

Department of Environmental Protection
Office of Explosives and Blasting
601 57th Street SE
Charleston, WV 25304
ATTN: Surface Mine Blaster Secretary