

PA Pre-Shift Contest

August 2019

STAGING AREA

EXAMINER HAS 10 MINUTES TO ACCOMPLISH WHAT IS WRITTEN BELOW

- **Receives blank map**
- **Receives written statement**
- **Receives mine plans**
- **Receives ventilation map**
- **Number index cards during this 10 minute period (50)**
- **Detectors will be left on during examination**
- **If a placard is not present where a gas test is required, the reading shall be 0.0% CH₄ 20.9% O₂**
- **It is very important to simulate and verbally announce movement through ventilation structures such as stoppings, overcasts, line curtains, check curtains, airlocks, etc., along with actions taken when finding and/or repairing violations, dangers or conditions when taking air readings or pumping water**
- **Place your working number on the top right hand corner of all your problem documents before handing them to the judges when leaving the field**

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Written Statement

I am the mine foreman of the Big Hill Mining Company. We have a new mining section called 4 right which is developing for a new longwall panel. The section is a 3 entry gate development which will form the headgate entries of the panel. This mine is ventilated with an exhaust fan which ventilated 4 other developing sections. 4 right about 3 miles inby the exhaust shaft. There is an intake shaft located near the front end of this section. The #1 serves as the return. #2 entry is the main intake and #3 is the belt which is ventilated with intake air and coursed to the return near the section. You will note on your map that we have driven a longwall recovery chute off the #3 entry. The faces typically generate methane which is controlled through normal ventilation. The 4 right crew went into the section and started mining coal shortly after 8am. At 10:30am, the section belt went down with an electrical fault in the drive motor. The crew was told to go to the spare section and load coal there for the rest of the shift. I need you to pre-shift the 4 right section for the on-coming afternoon shift. You will start at the power center located off the #2 entry and will have 40 minutes to complete your exam.

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ROOF CONTROL PLAN

- **Minimum roof support length 96 inches**
- **9 to 16 foot cable bolts shall be installed in all intersections**
- **Roof bolt installation spacing 4 feet by 4 feet**
- **Maximum entry width 18 feet**
- **67 feet diagonal intersection measurement**
- **Maximum cut depth 20 feet**
- **Danger signs and/or physical barriers shall be placed to prevent entry into unsafe or unsupported areas**
- **Only one shuttle car corner may be cut at any four way intersection**
- **Mining height averages 8 feet**
- **All roof and rib areas must be protected only by approved mesh material that is specified in the Roof Control Plan**
- **48 inch minimum rib bolt length**

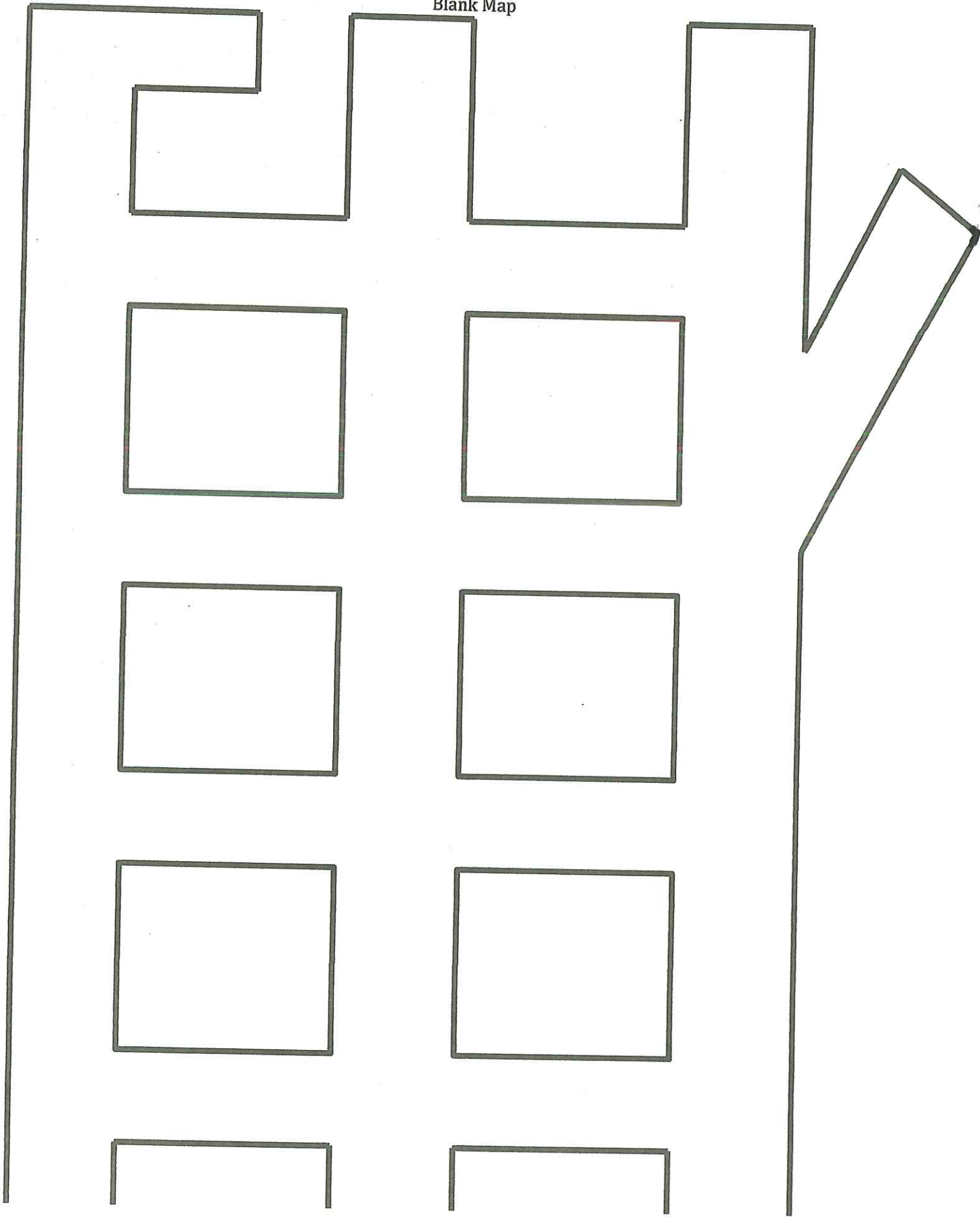
VENTILATION PLAN

- **Exhaust ventilation**
- **Permanent stoppings shall be maintained up to and including the third connecting crosscut.**
- **Auxiliary fans, line curtains and tubing are means used to adequately aid in face ventilation**
- **Face line curtains and tubing must be properly installed to dilute and render harmless any gas accumulation which may occur. They must be adequately hung tight to rib & roof and within 5 feet of the face or unsupported area**
- **Simulate and verbally announce your actions when passing through any type of ventilation control (stoppings, regulators, line curtains, check curtains, etc.)**
- **Violations , dangerous conditions can be corrected when needed, however; ventilation changes cannot be made until entire section has been examined (inspected)**

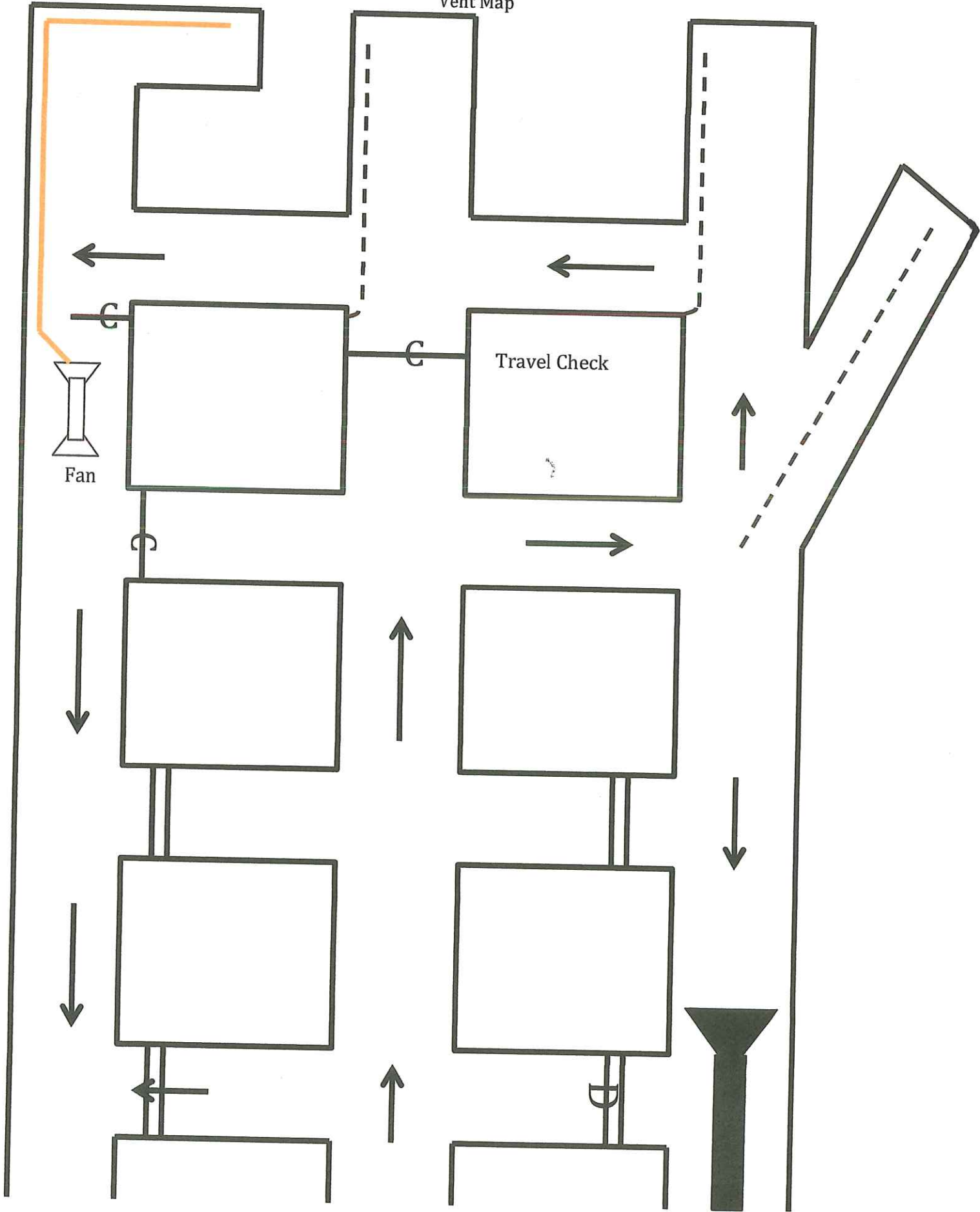
FIRE, ESCAPE AND EVACUALTION PLAN

- **There will be a minimum of 14 one hour SCSR's on each section and maintained at the e-sled**
- **A minimum of 1 fire extinguisher and 5 bags of rock dust will be located at each electrical installation**
- **A fire valve shall be located near the tailpiece of the belt**
- **Lifelines will be maintained in the #2 primary escapeway up to the loading point. These shall also be maintained in the alternate, #1 entry with red directional indicators**
- **A refuge chamber must remain within 1200 feet of the working face**

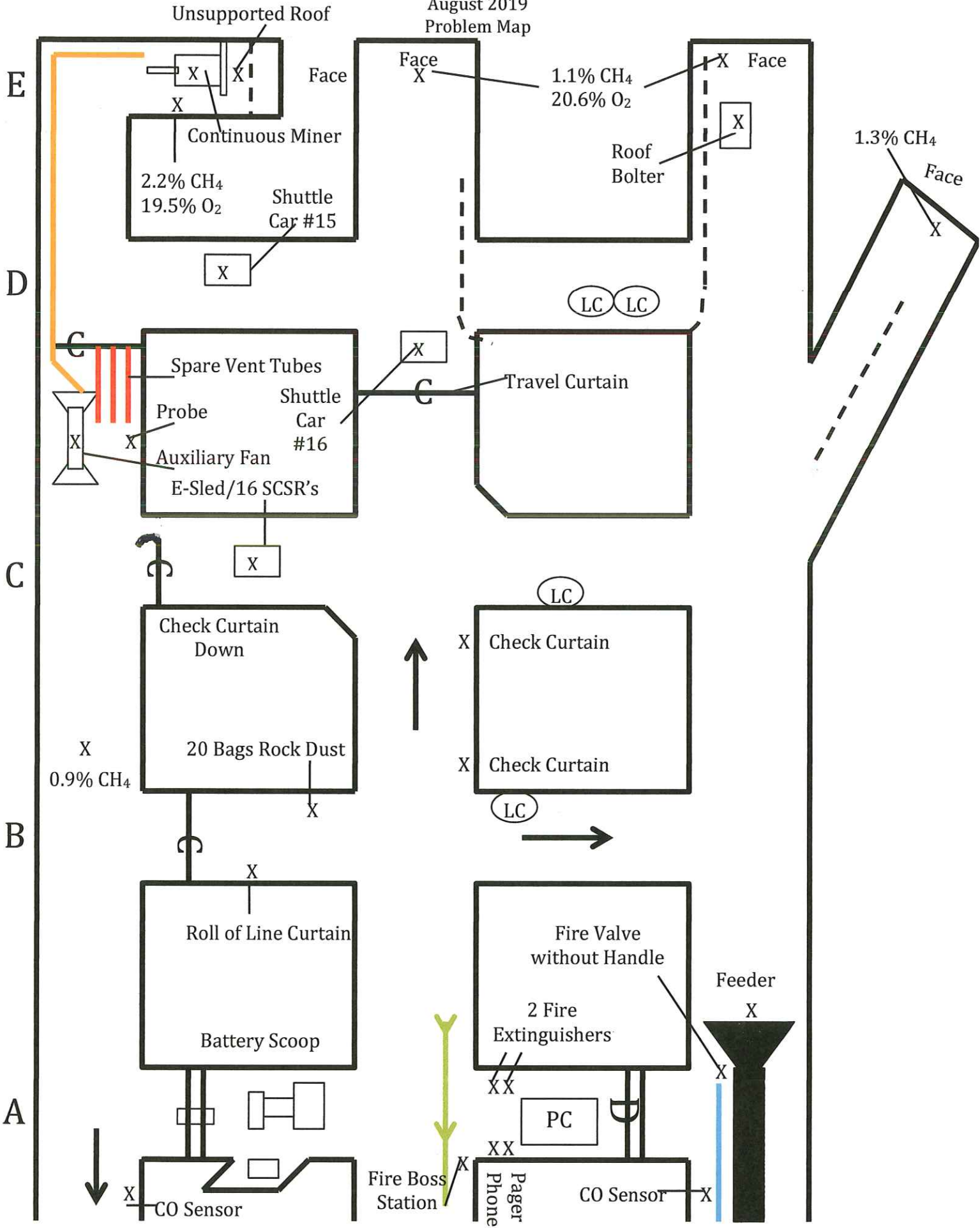
PA Pre-Shift Contest
August 2019
Blank Map



PA Pre-Shift Contest
August 2019
Vent Map



PA Pre-Shift Contest
 August 2019
 Problem Map



**PA Pre-Shift Contest
August 2019**

Judge's Discount Sheet

Contestant _____ No. _____

Contestant has 2 minutes to start problem once entering fire boss station.

<u>Fire Boss Station</u>	Yes	No
Start Clock (rule 1)	_____	_____
Check in (rule 1)	_____	_____
SCSR check (rule 3)	_____	_____
Gas detector(s) (rules 2 & 19)	_____	_____
Required equipment (rule 2)	_____	_____
Required equipment maintained operable (rule 14)	_____	_____
 <u>#2 Entry</u>		
Gas Test with DTI #2 Entry 0.0% CH4 20.9% O2 verbally state (rules 5 & 6)	_____	_____
Verbally state visual exam, roof/rib #2 Entry(rule 10)	_____	_____
 <u>#2 to #3A Power Center</u>		
Gas Test with DTI Power Center 0.0% CH4 20.9% O2 verbally state (rules 5 & 6)	_____	_____
Examiner should notice 1st violation - no rockdust at power center location (rule 17)	_____	_____

Only 2 fire extinguishers present - he verbally states what he finds and places a danger tag/DTI at location (rule 11)

#2 to #1A Scoop Charger

Gas Test with DTI Scoop Charger 0.0% CH4 20.9% O2 verbally state (rules 5 & 6)

Examiner should notice **2nd violation** - no fire protection at scoop charger (rule 17)

Note: Examiner once finding rockdust on the section can adequately correct the 1st & 2nd violation by placing 5 bags of rockdust at the power center and take 5 more bags to the scoop charger location - he can also remove 1 of the 2 extinguishers from the power center and place it with the rockdust at the scoop charger - the examiner should verbally announce all of these actions to the judges (rule 17)

He verbally states what he finds and places a danger tag/DTI at location (rule 11)

Examiner proceeds over to #3 Entry going through door and closing it behind him (rule17)

#3 Entry/Loading Point

Gas Test with DTI #3 Entry and examiner can include loading point of section 0.0% CH4 20.9% O2 verbally state (rules 5 & 6)

Verbally state visual exam roof & rib #3 Entry (rule 10)

Examiner should notice the **3rd violation** that the fire valve is missing its handle - he verbally states what he finds and places a danger tag/DTI at location (rule 11)

#3 to #2B Crosscut

Examiner will leave loading point and proceed up #3 Entry - when he gets to #3 to #2 crosscut, he may notice the **4th violation** - no permanent stopping started within this crosscut - he verbally states what he finds and places a danger tag/DTI at location (rule 11)

#3 Entry/Recovery Chute

Examiner should notice the **6th violation** - the line curtain leading into the recovery chute is not out into the entry enough to ventilate it - the line curtain is also not extended far enough into the face of the chute - the examiner should verbally state that he would be able to repair the line curtain (rule 17) - a danger tag/DTI should be placed at this location (rule 11)

Note: Ventilation can not be altered until entire section is examined (rule 17)

When the examiner proceeds to the recovery chute face gas test/DTI recovery chute face 1.3% verbally state (rules 5 & 6) he finds the **7th violation**, high CH4 in face - he verbally states what he finds and also places a danger tag at this location (rule 11)

#3 Face

He then leaves the chute and proceeds to the #3 Face - gas test/DTI #3 Face 1.1% CH4 20.6% O2 verbally states (rules 5 & 6) the **8th violation** - high CH4 in #3 Face - he verbally states what he finds and also places a danger tag/DTI at this location (rule 11)

#2D Entry to #2 Face

Examiner leaves the #3 Face and inspects to #2D Entry - just inby the intersection - he finds the **10th violation** - the line curtain is installed way short of #2 Face and not installed in exhausting ventilation (opposite side of entry) he verbally states what he finds and places a danger tag/DTI at this location (rules 7, 11 & 17)

Note: Ventilation can not be altered until entire section is examined (rule 17)

The examiner enters the #2 Face gas test/DTI #2 Face 1.1% CH4 20.6% O2 verbally states (rules 5 & 6) the **11th violation** - high CH4 in the #2 Face - he verbally states what he finds and places a danger tag at this location (rule 11)

Examiner leaves #2 Face and continues his inspection over to #1 Entry

#1 to #2E Crosscut

As he rounds the corner into #1 to #2E Face he encounters the **12th violation** - high CH4 outby the face (2.2% CH4) - he verbally states what he finds and places a danger tag/DTI at this location (rules 5, 6 & 11)

The examiner should immediately retreat to the power center and de-energize section power - he returns to the #1 to #2E Face and finds the **13th violation** - the ventilation tubing is way short of the partially mined out cut - he verbally states what he finds and places a danger tag/DTI at this location (rules 11 & 17)

Once the examiner approaches the partially minded out cut - he notices the **14th violation** - no visual warning was placed in front of the unsupported roof in #1 to #2E Face - he verbally states what he finds and places a danger tag/DTI at this location (rules 11 & 17)

Gas test/DTI #1 to #2E Face 2.2% CH4 19.5% O2 verbally state (rules 5 & 6)

The examiner leaves #1 to #2E Face and inspects the #1 Entry outby - he finds an extendable probe and returns to #1 to #2E Face - extends probe into the unsupported roof to the face and the gases are the same as found outby Face in #1 to #2E Crosscut (rules 5 & 6)

#1 Entry Outby

The examiner passes the auxiliary fan outby in the #1 Entry and finds the **15th violation** - the check curtain in #1 to #2C Crosscut is partially down - he verbally states what he finds and places a danger tag/DTI at this location (rule 11)

Note: Ventilation can not be altered until entire section is examined

As examiner continues his outby inspection in the #1 Entry - he finds 0.9% CH4 between B and C Crosscuts - he then finds the **5th violation** - no permanent stopping started within #1 to #2B Crosscut - only a check curtain exists - he verbally states what he finds and places a danger tag/DTI at this location (rules 11 & 17)

And finally in the #1 Entry outby the **16th violation** is found - no alternate lifeline - he verbally states what he finds and places a danger tag/DTI at this location (rules 11 & 17)

Gas test/DTI #1 Entry 0.9% CH4 20.9% O2 verbally state (rules 5 & 6)

Verbally state visual exam roof & rib #1 Entry (rule 10)

The examiner leaves #1 Entry and continues his inspection to #2 Entry through #1 to #2C Crosscut

The emergency sled has a sufficient number of SCSR's

The **9th violation** is found on section - within the #2C Intersection - 2 cut and bolted corners were mined - the examiner verbally states what he finds and places a danger tag/DTI at location (rules 11 & 17)

The examiner inspects the remaining areas of the section (rule18) - he can now correct any ventilation that needs to be repaired

Final Steps

Repair check curtain that was partially down in #1 to #2C Crosscut

Take air reading at either last open crosscut location (A or B)

Area = 16' wide x 8' high

Velocity = 145 FPM

CFM = 18,560

Proper air reading procedures need to be conducted (rules 7,8 & 9)

Carry vent tubes up to and extend up to within 5 feet of the unsupported roof in #1 to #2E Face

Take a second gas test with probe in #1 to #2E Face (rules 5 & 6)

Judges: Turn over placard, new gas readings are 0.8% CH4 20.9% O2 in #1 to #2E Face-the area outby to #1 Entry corner where accumulations of high CH4 were found are cleared

Repair the line curtain in #2 Face by moving the line curtain to other side of entry and install it to within 5' of the face

Take a second gas test in #2 Face (rules 5 & 6)

Judges: Turn over placard , new gas readings are 0.7% CH4 20.9% O2 at #2 Face

Take a second gas test in #3 Face (rules 5 & 6)

Judges: Turn over placard , new gas readings are 0.5% CH4 20.9% O2 at #3 Face

Extend line curtain in recovery chute out further into #3 Entry to properly ventilate

Add line curtain and extend into recovery chute to within 5 feet of the face

Take a second gas test in recovery chute face (rules 5 & 6)

Judges: Turn over placard , new gas readings are 0.4% CH4 20.9% O2 at Recovery Chute Face

Examiner can return to the fire boss station

Checks out (rule 1)

Stops Clock (rule 1)

Area = 16' x 8'

Velocity = 145

PRESHIFT-CERTIFICATION EXAMINER'S REPORT

Date of Examination		Time From:	AM	To:	AM	
Section/Area:		Reported Outside	Yes	No	Time:	
Reported By: Examiner's Name		Received By:				

Pre-Shift required within 3 hours prior to any 8 hour interval

Location	Hazardous Condition	Action Taken	CH4	O2

Air Measurements

Location:	CFM	CH4	O2	Location:	CFM	CH4	O2
L.O.C.				Belt velocity			

Examiner's signature Signed by Pre Certified Examiner		
	Date	Certification #
Countersigned by Mine Foreman		
	Date	Certification #

PRESHIFT-CERTIFICATION EXAMINER'S REPORT

Date of Examination	8- -2019	Time From: AM To: AM	
Section/Area:	4 Right Section	Reported Outside Yes _ No <u>x</u> Time: AM/PM	
Reported By:	Hand Carried	Received By:	

Pre-Shift required within 3 hours prior to any 8 hour interval

Location	Hazardous Condition	Action Taken	CH4	O2
Section Power Center	no rockdust at location	cor/placed rockdust at location	0.0%	20.9%
Section Scoop Charger	no fire protection	cor/placed fire protection at location	0.0%	20.9%
Section Loading Point	fire valve without handle	dangered off/reported	0.0%	20.9%
#3 to #2 B Crosscut	no permanent stopping	dangered off/reported		
#2 to #1 B Crosscut	no permanent stopping	dangered off/reported		
Recovery Chute	insufficient line curtain	cor/extended line curtain		
Recovery Chute Face	over 1% CH4	corrected by ventilation	old	1.3%
			new	0.4%
#2C Entry Intersection	2 corners cut	dangered off/reported		
#3 Face	over 1% CH4	corrected by ventilation	old	1.1%
			new	0.5%
#2D to #2 Face	improperly installed and insufficient line curtain	cor/changed & extended line curtain		
#2 Face	over 1% CH4	corrected by ventilation	old	1.1%
			new	0.7%
#1 to #2E Face	over 1% CH4	dangered off/de-energized section power	old	2.2%
			new	0.8%
#1 to #2E Face	insufficient vent tubing	cor/installed tubes		
#1 to #2E Face	no visible warnings	dangered off/corrected		
#1 to #2C Crosscut	check curtain down	cor/repaired check curtain		
#1A to B Entry	no alternate life line	dangered off/reported		
#3 Entry			old	0.9%
			new	0.4%

Air Measurements

Location:	CFM	CH4	O2	Location:	CFM	CH4	O2
L.O.C. #2 to #1D Crosscut	18,560						
(or) C to D #1 Entry							

Remarks: All areas of this section: travelways, faces, belt, machinery and electrical installations were found free from any unsafe or dangerous conditions other than those noted above.
The air is traveling in it's proper course and normal volume.

Examiner's signature Signed by Pre Certified Examiner	8- - 2019	7799
	Date	Certification #
Countersigned by Mine Foreman		
	Date	Certification #

PA Preshift Contest

August 2019

1. The escapeway map shall be posted or readily accessible for all _____ at the following locations; in the working section, where mechanized mining equipment is being installed or removed, at the refuge alternative and at a surface location of the mine where miners congregate.
a) Workers b) individuals c) miners

2. The last open crosscut is the crosscut in the line of pillars containing the permanent stoppings that _____ the intake air courses and the return air courses.
a) Split b) separate c) change

3. The mine ventilation plan shall _____ the location where the air quantity ventilating the work place must be greater than 3,000 cubic feet per minute when coal is being cut, mined, drilled for blasting or loaded.
a) Illustrate b) indicate c) show

4. Damaged rollers or other damaged belt conveyor components, which pose a fire hazard must be _____ repaired or replaced.
a) Immediately b) appropriately c) adequately

5. The approved ventilation plan and _____ revisions shall be posted on the mine bulletin board within 1 working day following notification of approval.
a) New b) any c) updated

6. _____ taking a reading with an anemometer, a commonly used method is to traverse the airway.
- a) Before b) While c) When
7. The person conducting the preshift examination shall examine for hazardous conditions, _____ for methane and oxygen deficiencies, and determine if the air is moving in its proper direction.
- a) Examine b) test c) inspect
8. A supply of first aid equipment shall be maintained in each working section not more than _____ feet outby the active working face or faces.
- a) 200 b) 300 c) 500
9. Refuge alternatives shall be located within 1,000 feet from the _____ working face and from the locations where mechanized mining equipment is being installed or removed.
- a) Furthest b) nearest c) closest
10. Prior to assuming duties on a section or outby work location, a _____ shall travel both escapeways in their entirety.
- a) Certified person b) fireboss c) foreman

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