

**03-10-15**

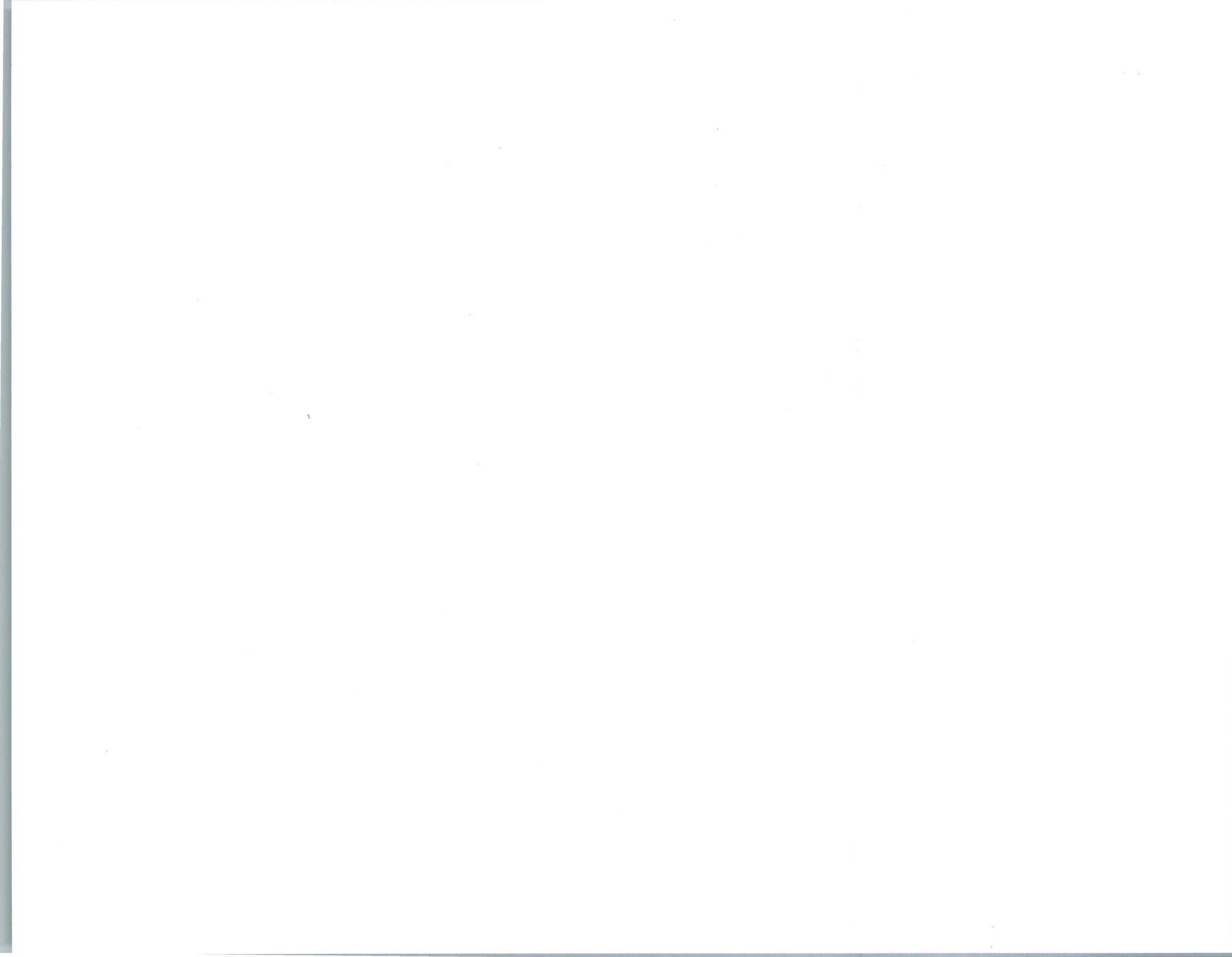
**LUNCH &**

**LEARN:**

**UNDERGROUND**

**MINE RESCUE**

<TARGET><BILL></BILL><SUBJECT>03-10-15 LUNCH and LEARN  
UNDERGROUND MINE  
RESCUE</SUBJECT><COMM>HRES29</COMM></TARGET>



[Home](#)   [Legislature\(2015 - 2016\)](#)   [Meetings](#)

Legislature(2015 - 2016)

**03/10/2015 12:00 PM RESOURCES**

CAPITOL 106

[Schedule](#)

[Documents](#)

Lunch & Learn:

"Underground Mine Rescue" by Chris Kennedy,  
General Manager, Pogo Mine

Sponsored by Representatives Talerico & Nageak



Going home safe and healthy every day

# Mine Rescue

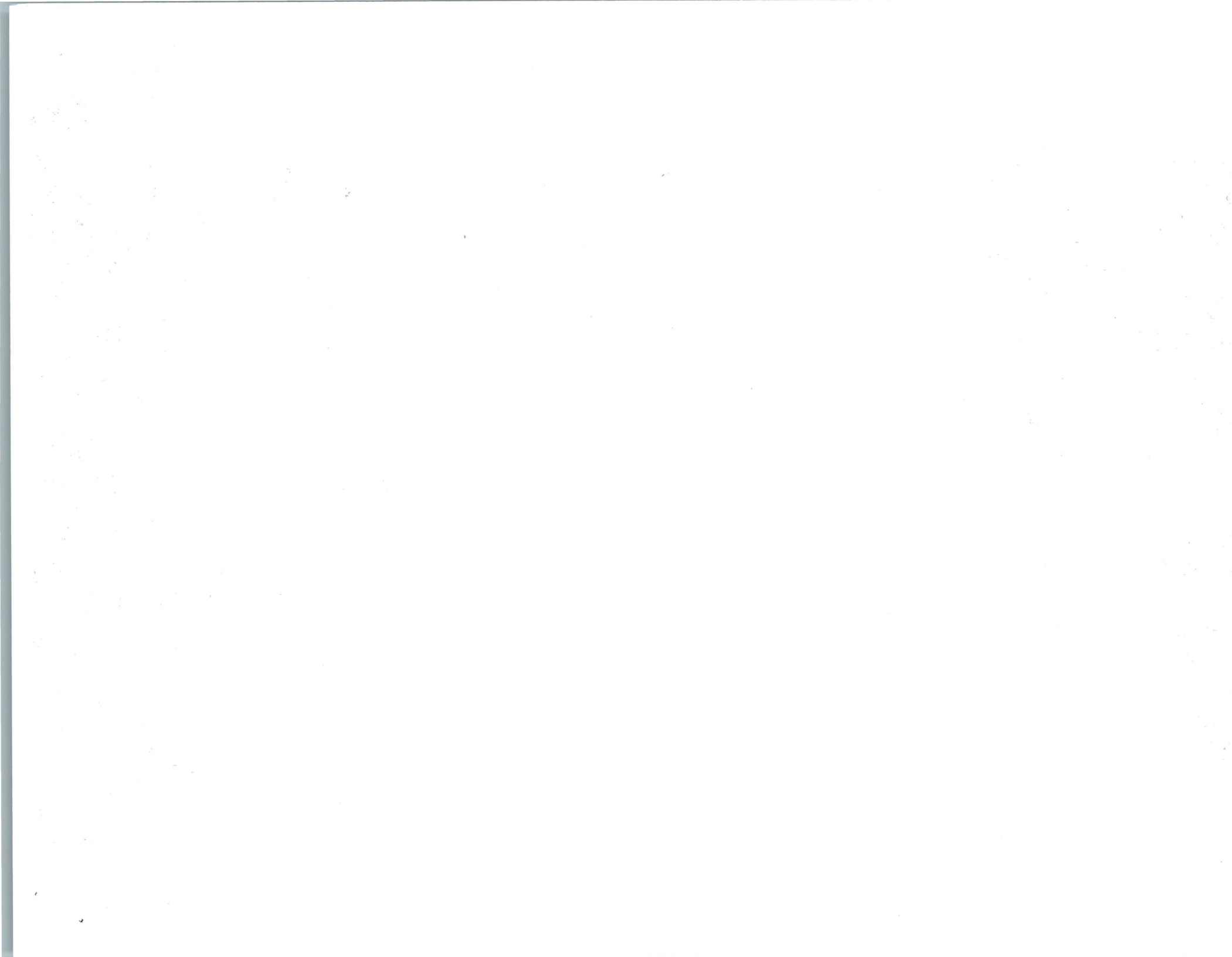
MINING DONE RIGHT



SUMITOMO METAL MINING POGO LLC



POGO MINE



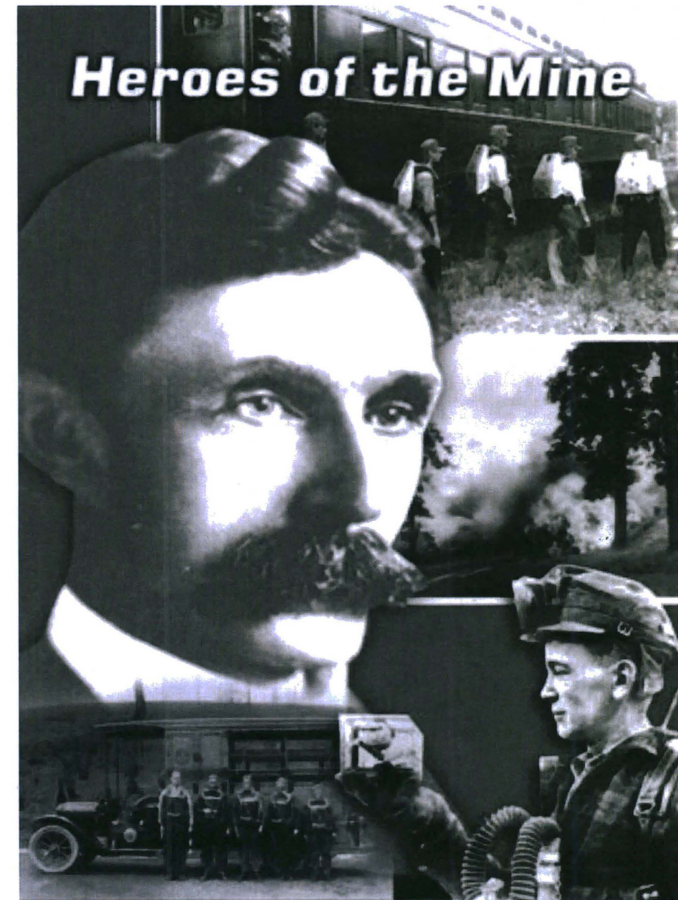
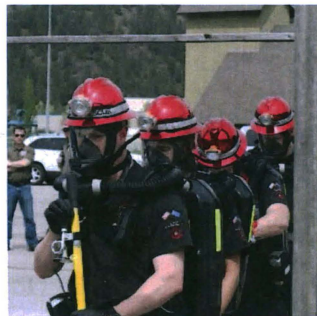
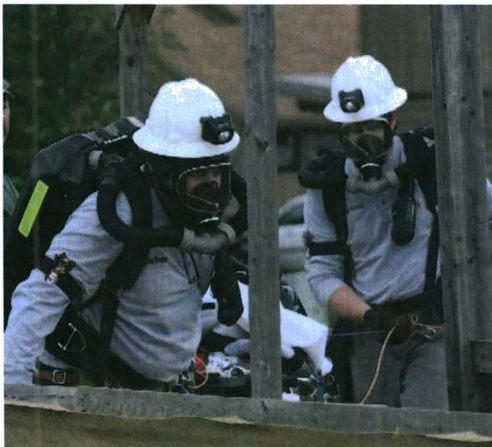
# Mine rescue



Throughout history, miners from all walks of life have labored both above ground and underground confident that should a disaster occur, every possible effort would be made to **Locate** and **Rescue** them.

This was not always the case!

## Evolution of Mine Rescue





# Mine disasters

1900 to 1909 was known as The Deadliest Decade:

## Coal Mining

A total of 3,660 miners died in 133 mine disasters

## 1907

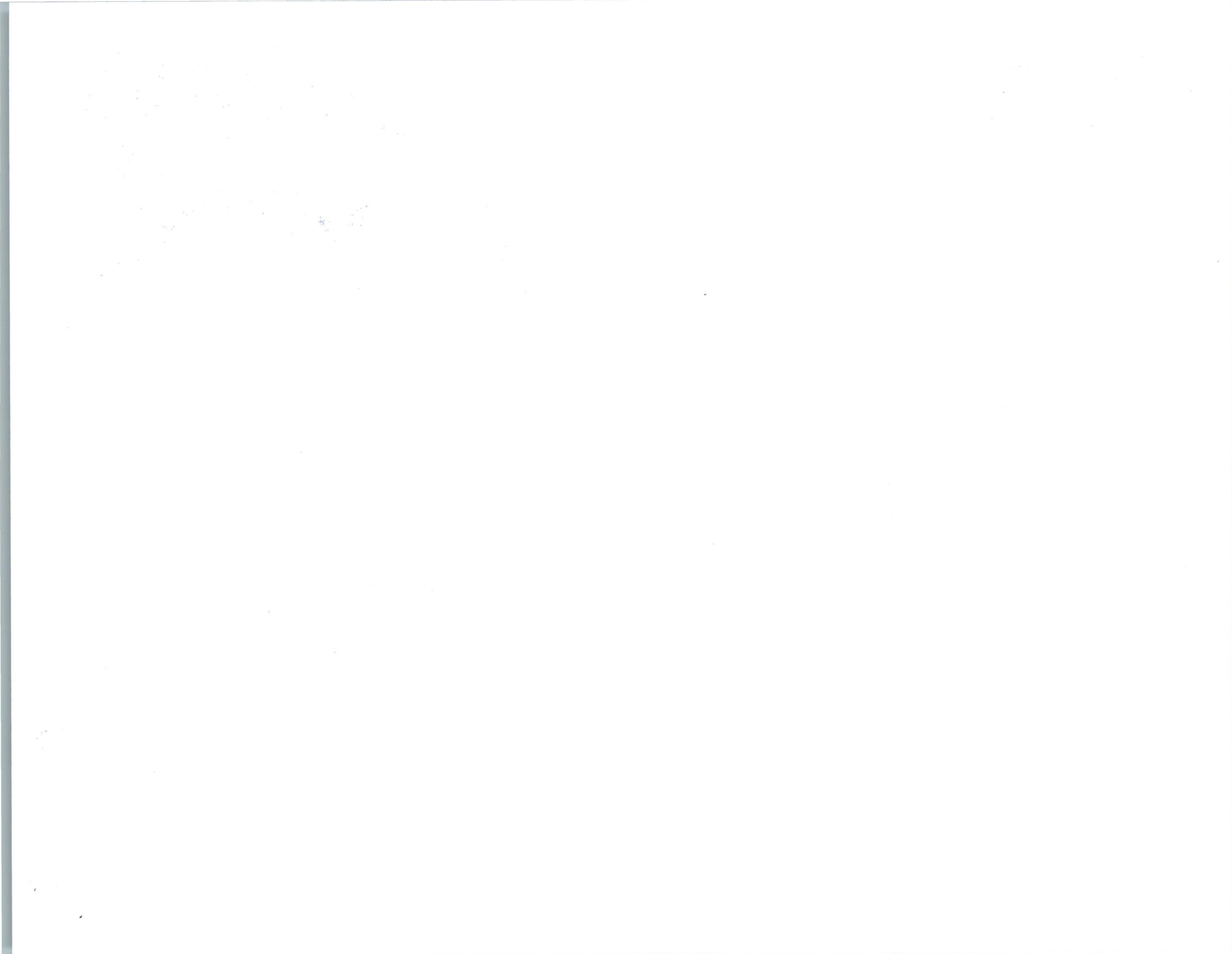
The month of December was known as “Bloody December”

A staggering 703 miners died in 5 separate mine explosions

## December 6, 1907

Explosions at the No. 6 & 8 coal mines in WV caused the death of 362 miners





# Mine disasters

In the wake of these tragedies, July 1, 1910 Congress established the U.S. Bureau of Mines within the Department of the Interior.

Its primary directive was expressively clear – **to reduce fatalities in the mining industry.**

In 1910, Dr. Joseph A. Holmes was appointed the first Director of the Bureau of Mines by President William H. Taft.

Dr. Holmes is credited with making popular the slogan “safety first,” and was responsible for major improvements in mine safety.



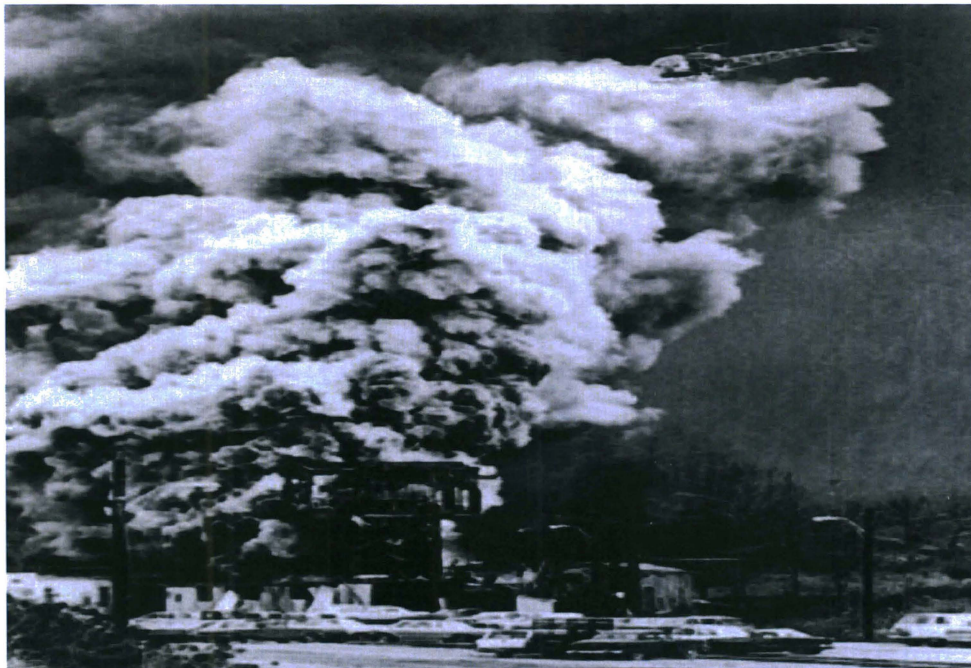


# Legislation established for miners

Despite continual calls for improvements in mine safety, stronger laws seem to be introduced only when miners die in large numbers.

For example, as a result of an explosion at West Virginia's Farmington #9 Mine in 1968, which killed 78 miners, Congress passed and the President signed the **Federal Coal Mine Health and Safety Act of 1969**, generally referred to as the Coal Act.

**However, this legislation did not protect metal/nonmetal miners.**





# Legislation continues

Unfortunately, mining tragedies continued:

- In May of 1972, a fire engulfed the Sunshine Silver Mine in Idaho, killing 91 workers.
- On March 9, 1976, two explosions occurred within days of each other at Kentucky's Mine, killing 26 miners, including 3 rescue workers.

These disasters laid the groundwork for the passage of the **Federal Mine Safety and Health Act of 1977 "Mine Act"**.

This legislation amended the Coal Act (1969) and consolidated all federal health and safety regulations of the mining industry under a single statutory scheme.

The Mine Act also transferred responsibility for carrying out its mandates from the Department of the Interior to the Department of Labor and created the Mine Safety and Health Administration (MSHA).

Part of reducing fatalities was to establish mine rescue teams to help when mine disasters take place



# The vision of mine rescue

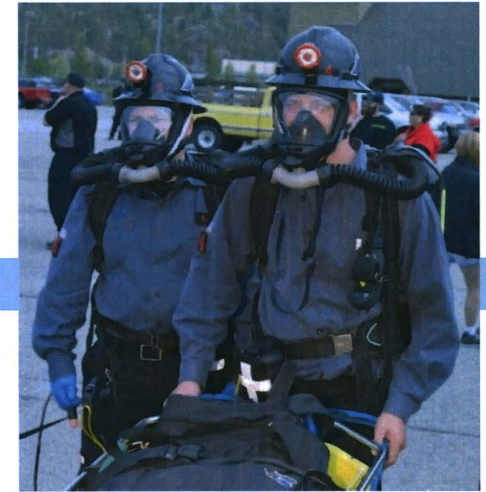
Mine rescue is the specialized job of rescuing miners and others who have become trapped or injured, and combating fires and other emergencies in underground mines such as:

Explosions, Rock-Falls, Toxic Gases, Influx of Water and other Hazards

Mine rescue teams are trained and equipped to deal with these Hazards

Mine Rescue efforts and abilities have progressed and have come a long way from the beginning.

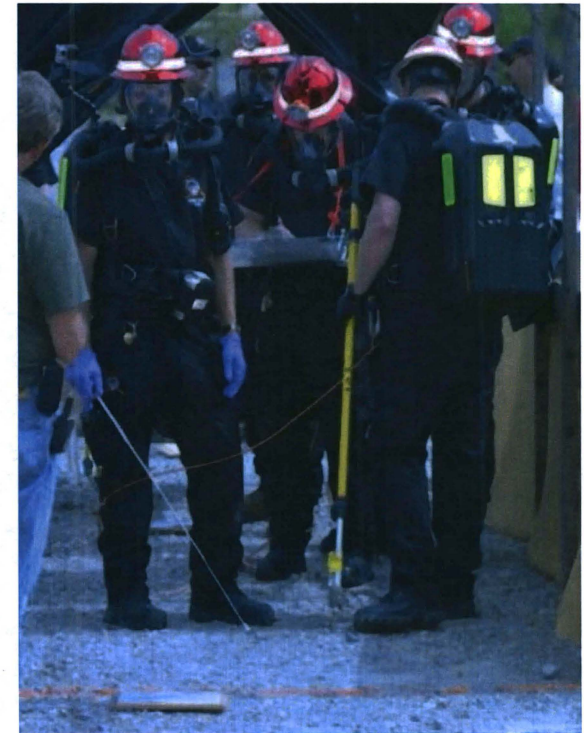
Today's technology improvements are leaps and bounds ahead of yesterday!





# Mine rescue

The primary objective of mine rescue is preventing loss of life. The secondary objective is the safe recovery of the mine and its return to normal production. Rescue Teams are usually made up of volunteers who, through their mine rescue responsibilities, **risk their own lives in order to save their fellow miners.**





# Mine rescue

- Under MSHA
  - Each mine must have an Emergency Action Plan (EAP)
  - Each mine must have a minimum of 12 people on a team
  - Each miner must have a MSHA approved “Training Plan”

There are a lot of guide lines and requirements that each mine and mine rescue team have to meet.

Mine rescue competitions



# The beginning of competitions

The first national mine safety demonstration was held at Forbes Field, in Pittsburgh, PA., on October 30, 1911 under the management and direction of the U. S. Bureau of Mines.

Field exhibits were witnessed by President William H. Taft and many officials on both National and State levels.



President William H. Taft and Dr. Joseph A. Holmes attend the national mine safety demonstration in Pittsburgh, PA. Almost 15,000 people were in attendance - October 30, 1911.





# Mine rescue team training and competition

Mine rescue competitions are often seen as team-building events, but they also provide the necessary hands-on training should an actual emergency happen. Additional benefits: Knowledge of other teams capabilities and they of yours

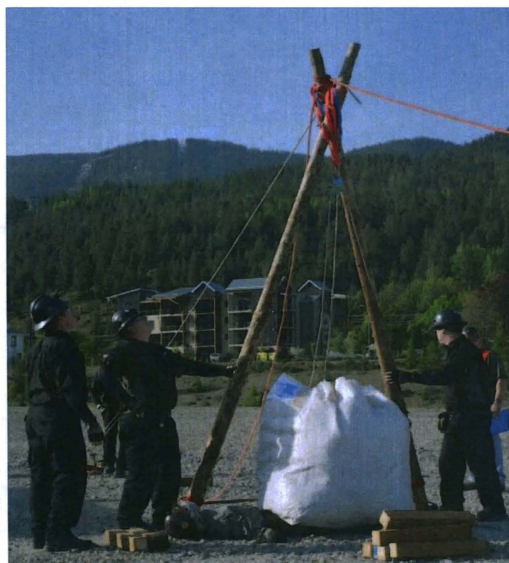
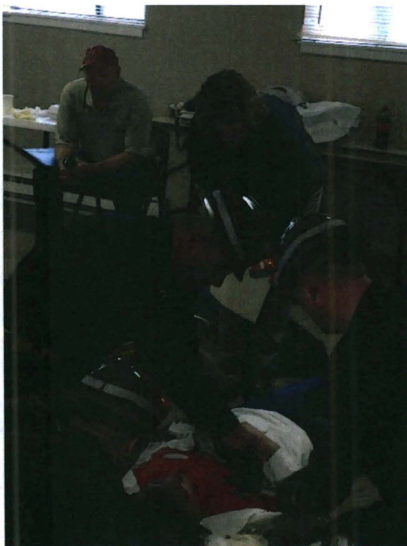




# Mine rescue

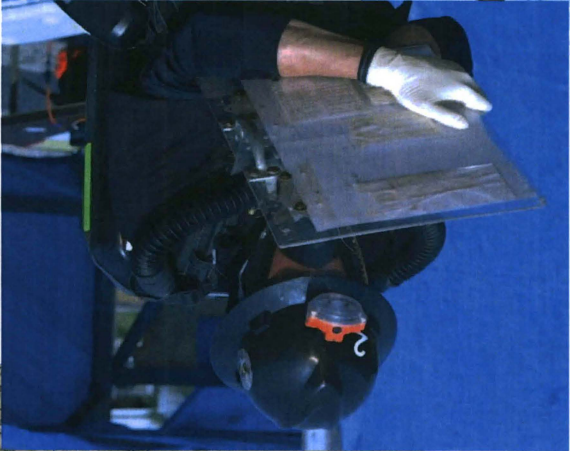
## What is in a Competition?

- Field
- Technical
- First Aid
- Ropes



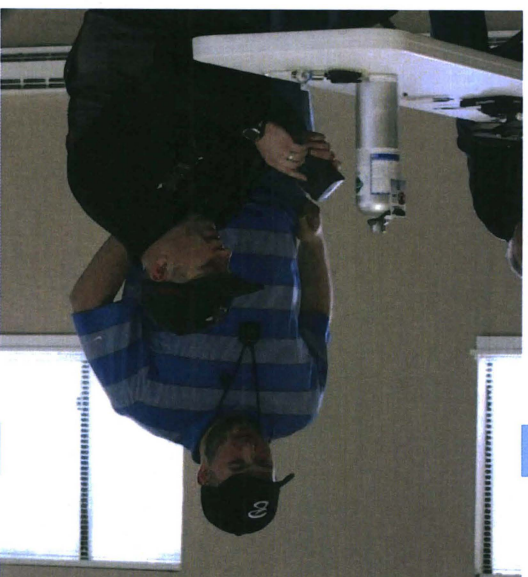


# Field





# Technical





# First aid







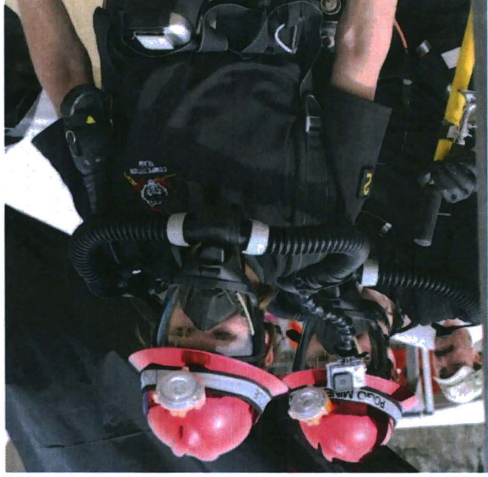
# Ropes rescue

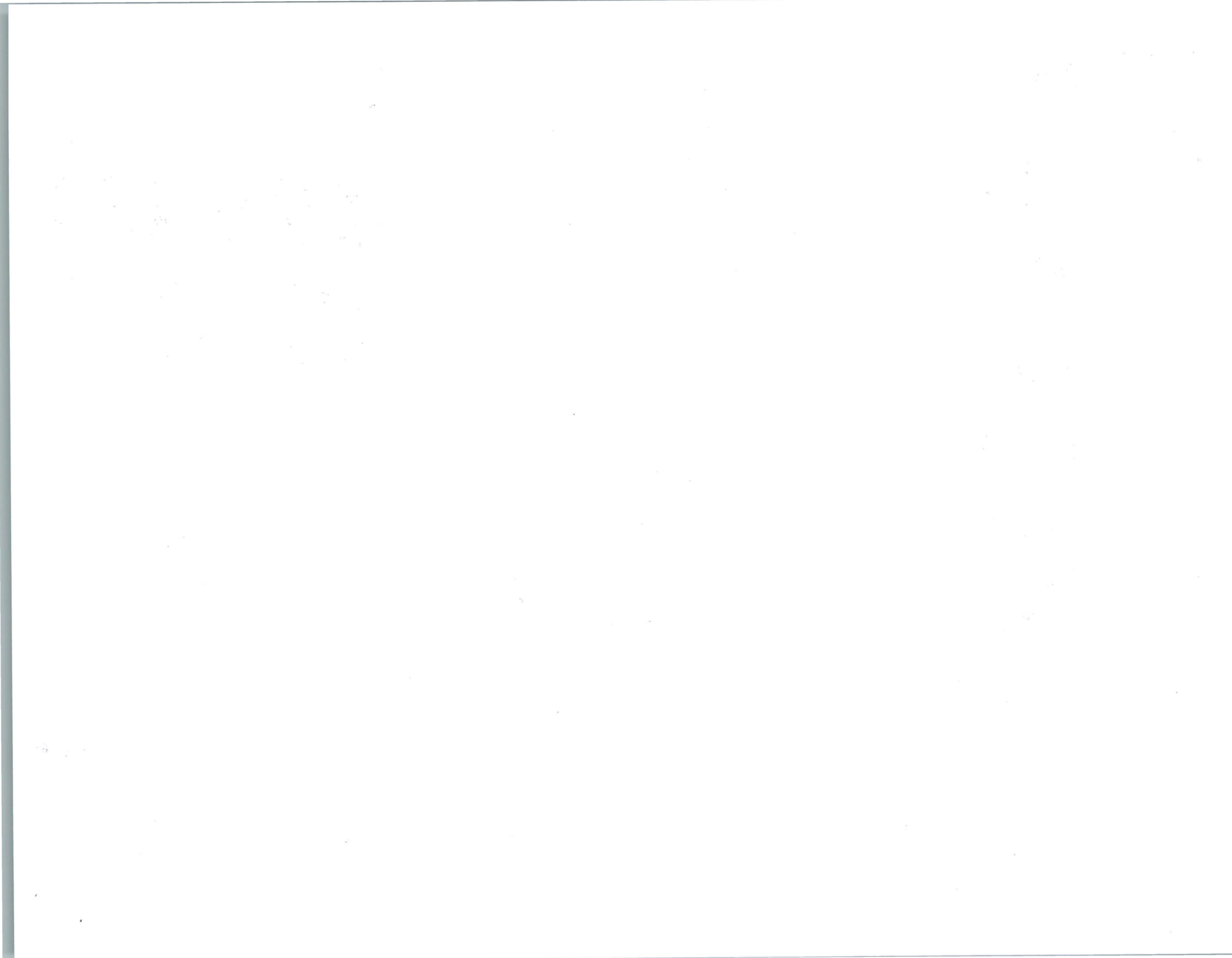


# Major improvements in equipment

Self Contained Breathing Apparatus (SCBA), is used to provide breathable air while working in dangerous atmospheres.

Hand held gas monitoring





# Major improvements in equipment

- Positive pressure system
- Three separate systems of breathable air
- Carbon monoxide (CO) and carbon dioxide (CO<sub>2</sub>) scrubbing
- Air conditioning system
- Digital gas monitoring
- UPS battery backup on all systems
- 36 to 96 hours stand alone capability
- Remote monitoring capability including video





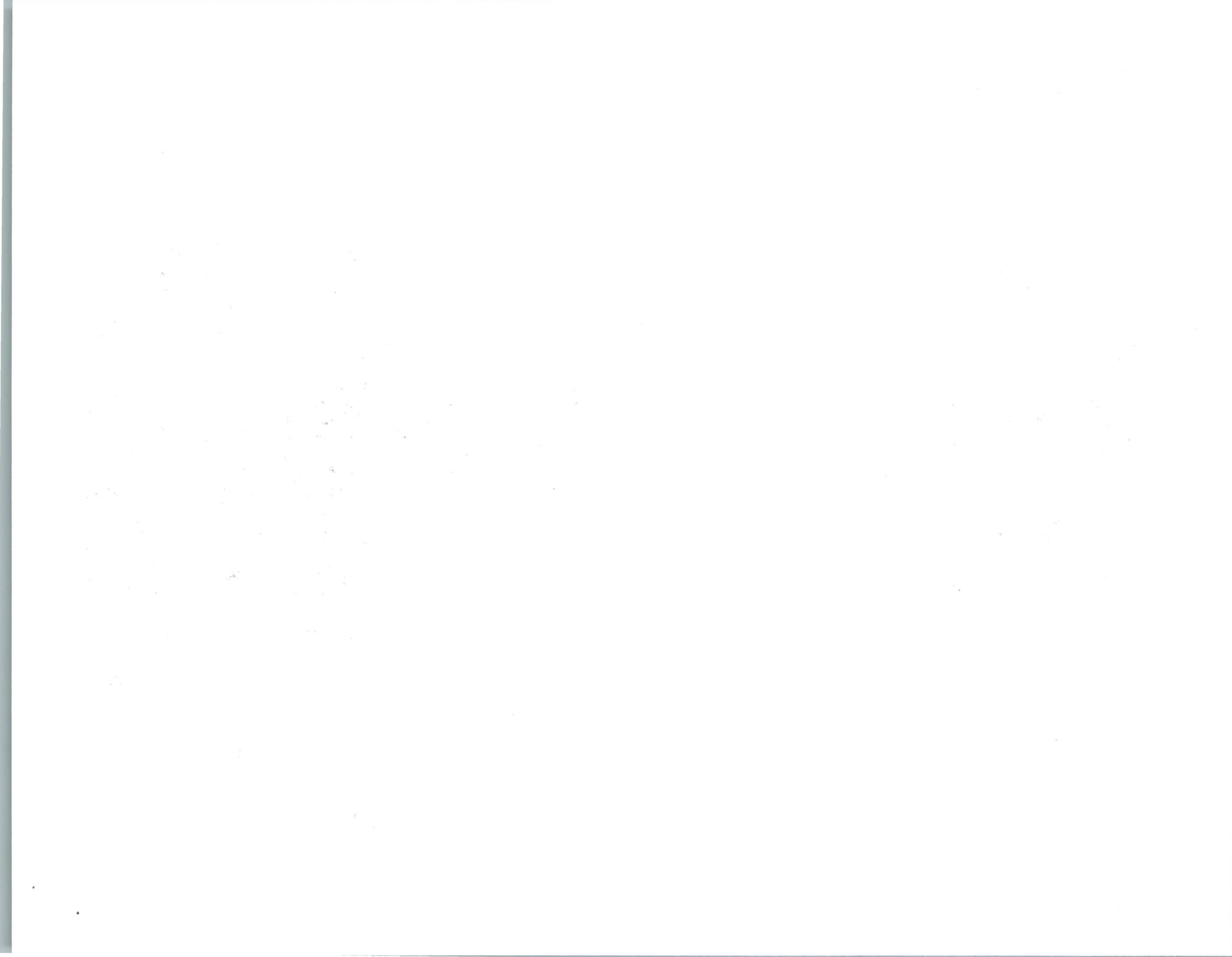
# Smaller mines benefit from CMR



Scabtron Mine



Mosquito Mine



# Mine Rescue

## Emergency Response Plan (ERP)

Section 2 of the MINER ACT requires mine operators to follow an Emergency Response Plan (ERP) that has been submitted and approved by MSHA. It addresses both the evacuation of miners endangered by an emergency and maintenance of miners trapped underground.

The ERP is a must in all cases of mine rescue, however, sometimes the plan approval process can take hours at best. Safety is most important in all cases.

The ERP is critical in ensuring another incident is not created and that the rescuers won't need rescuing.

We talked about improvements in equipment and large part of improving is to constantly looking at new technology to assist in rescue planning and efforts.

Obtaining information to assist with the plan is crucial.



# Mine rescue continues to evolve



The goal is to gain information on the situation as soon as possible without putting humans in danger.



Pogo is working with UAF and their UAV department.





# The potential future of mine rescue

- Exploring future possibilities:  
Sumitomo – UAF joint project



- Addressing UAV challenges
  - Underground navigation
  - Command & control
  - Data communications
  - Battery charging
- Leveraging UAF expertise
  - Mineral Industry Research Laboratory
  - Alaska Center for Unmanned Aircraft Systems Integration



# Central Mine Rescue division members

Danny Peterson CMSP  
Director, Central Mine Rescue

US Silver Corporation  
Coeur Unit – Wallace, ID  
Galena Unit – Wallace, ID

Sumitomo Metal Mining  
Pogo – Delta Junction, AK

Hecla Mining  
Lucky Friday – Mullan, ID

Hecla Mining  
Greens Creek – Juneau, AK

Coeur D'Alene  
Kensington – Juneau, AK

Kinross Gold Corp  
Kettle River/Buckhorn – Republic, WA

Sunshine Silver Mining Co  
Sunshine – Kellogg, ID

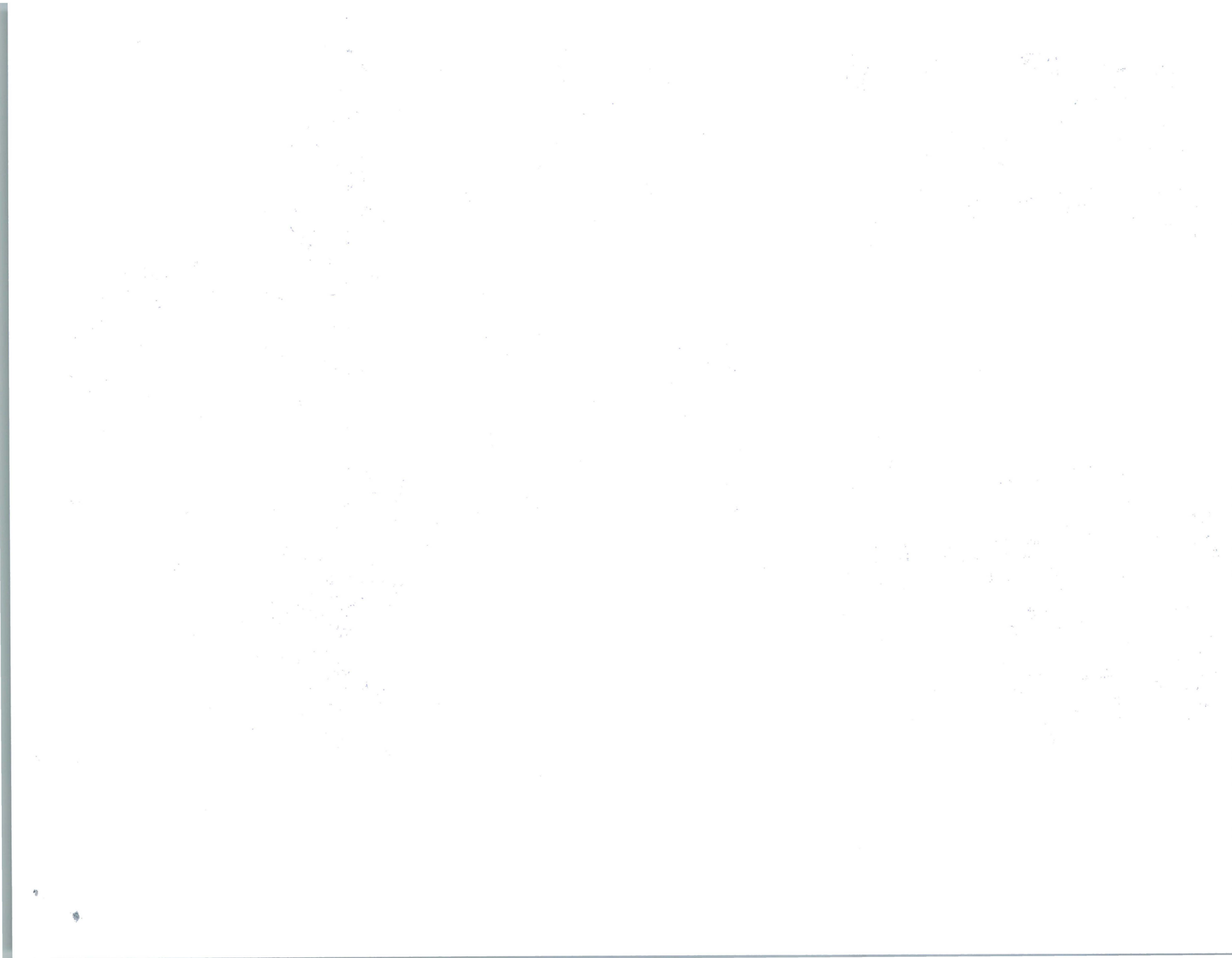
Troy Mine Inc.  
Troy Mining – Troy, MT

Teck  
Pend Oreille – Metaline Falls, WA



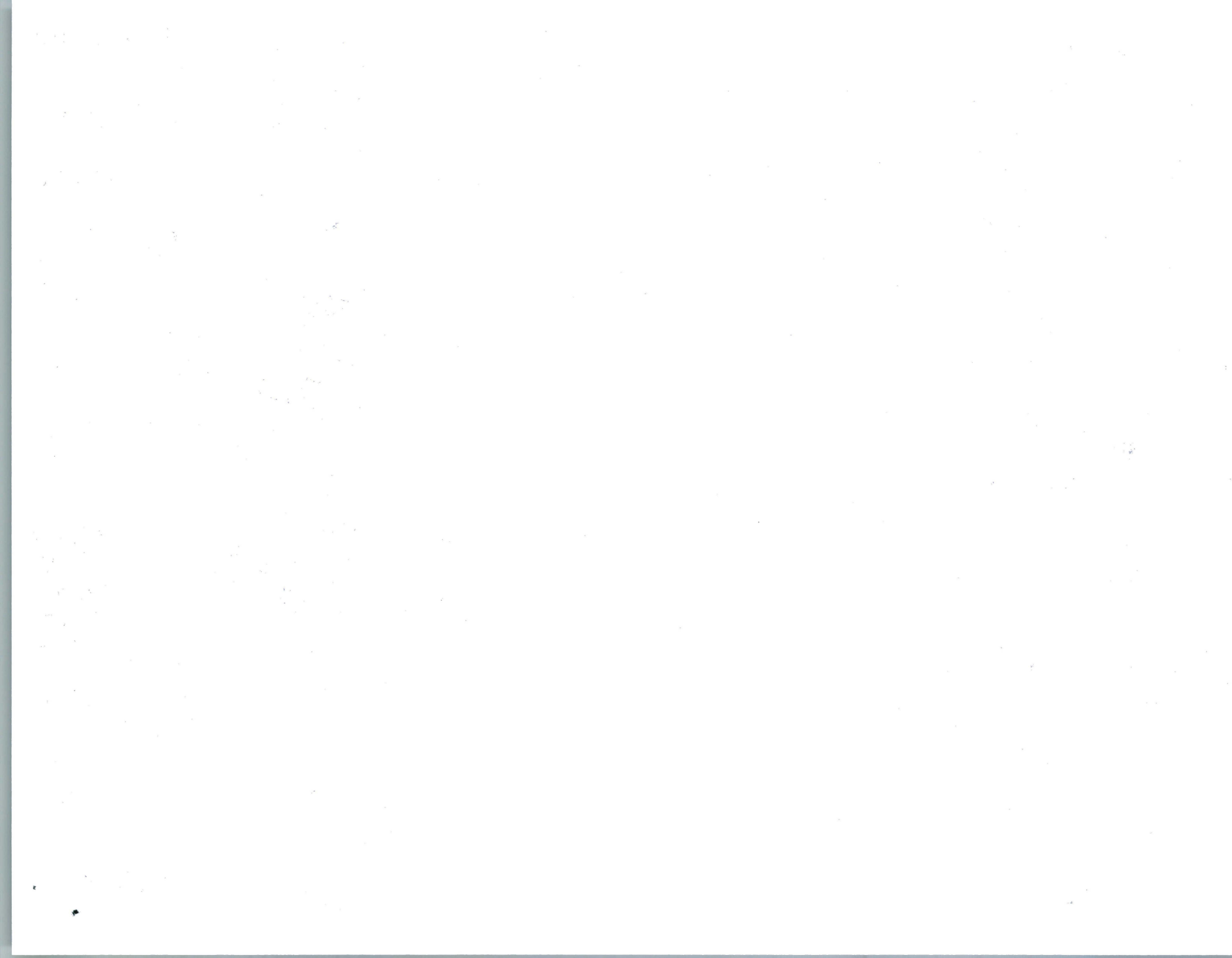
# Central Mine Rescue Division Teams





Central Mine Rescue Competition  
May 12-14, 2015  
Fairbanks, Alaska





# Mine Rescue

Everyone goes home safe and healthy every day

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907-895-2834



