

# SURFACE AND UNDERGROUND DRILL-AND-BLAST TRAINING

RED LION HOTEL & CASINO // ELKO, NV

SEPTEMBER 19–20, 2018

HOSTED BY:



## TRAINING AGENDA AT A GLANCE

The following topics will be covered during each training session, in addition to many others not listed.

WEDNESDAY, SEPTEMBER 19, 2018

### MORNING

#### // General Topics

- Safety
- Explosives products and applications
- Basic blasting calculations

### AFTERNOON

#### // Breakout Session #1: Surface Blasting

- Design of blasthole and blast patterns for production blasts, presplits, and perimeter blasts
- Powder factor
- Geologic considerations
- Delay/sequencing design

#### // Breakout Session #2: Underground Blasting

- Drill-and-blast pattern design for headings, stopes, and raises
- Powder factor
- Drill accuracy
- Geologic considerations
- Nonelectric and electronic timing

THURSDAY, SEPTEMBER 20, 2018

### MORNING

#### // Breakout Session #1: Surface Blasting

- Common performance problems
- Fragmentation and oversize control
- Highwall control/presplitting
- Troubleshooting

#### // Breakout Session #2: Underground Blasting

- Wall control
- Dilution control
- Common performance problems
- Troubleshooting

### AFTERNOON

#### // Questions About Blasting at Your Site?

Q&A session discussing any question you may have on any practices or issues occurring at your mining operation.

#### // Instrumentation Round Robin

A round-robin demonstration of various drilling and blasting instrumentation tools that can help with troubleshooting drilling and explosives performance in surface and underground applications, including:

- Seismographs
- Detonation velocity
- Borehole surveying
- Face profiling
- Cavity scanning
- Others

## ABOUT THE TRAINING

The drill-and-blast specialists at RESPEC and Missouri University of Science & Technology (S&T) are partnering to bring you a unique drill and blast training course in the heart of Elko, Nevada. The course includes separate sessions for surface and underground drillers and blasters and features up-to-date material and case studies that will educate both new and experienced blasters alike.

The classes will break out into surface and underground blasting sessions to focus on issues that your drillers and blasters face in the field on a daily basis. The course will include face-to-face discussions with RESPEC's and Missouri S&T's blasting specialists, hands-on training, and instrumentation training. The versatile training can be personalized for individual needs of your drillers and blasters.

[WWW.RESPEC.COM/ELKO](http://WWW.RESPEC.COM/ELKO)



# SURFACE AND UNDERGROUND DRILL-AND-BLAST TRAINING COURSE INFORMATION

## MEET OUR PRESENTERS:

### **NATHAN ROUSE, PHD, PE**

DRILL-AND-BLAST SPECIALIST, RESPEC

Dr. Rouse has 10 years of experience in surface and underground drill-and-blast operations in metal/nonmetal mines. He manages RESPEC's explosives engineering team, has a blasters' license in multiple states, and brings experience from projects worldwide.



### **TRISTAN WORSEY, MS, PE**

DRILL-AND-BLAST SPECIALIST, RESPEC

Mr. Worsey has 10 years of experience in surface and underground drill-and-blast operations in metal/nonmetal mines. He was previously a blast foreman working in surface gold mining and has multiple blasting licenses. Mr. Worsey has been pivotal in several specialized blasting projects and published research.



### **BRADEN LUSK, PHD, PE**

DRILL-AND-BLAST SPECIALIST,  
PROFESSOR AT MISSOURI S&T

Dr. Lusk is currently serving as the department chair of the Mining Engineering Department at Missouri S&T. He has over 20 years of experience in underground mining, drilling and blasting, and blast mitigation and industrial research. Dr. Lusk is also a certified MSHA trainer and underground foreman.



### **PAUL WORSEY, PHD, CENG**

DRILL-AND-BLAST SPECIALIST,  
PROFESSOR AT MISSOURI S&T

Dr. Worsey has worked in explosives-related research, teaching and consulting since 1978. He specializes in demilitarizing explosive ordnance, blast disturbance/damage, perimeter blasting, explosives safety, electronic initiating systems and fuse technology, explosive properties, fragmentation and the manufacture of new explosives. He has over 250 publications and has received several awards. He is the leader of the Explosives Engineering program at Missouri S&T.



## REGISTER NOW!

[www.respec.com/elko](http://www.respec.com/elko)

Early Bird Registration (Before July 15)	\$450
Registration Fee (After July 15)	\$550

All training fees include a training certificate, morning coffee, and lunch.

## HOTEL INFORMATION

**Red Lion Hotel & Casino Elko**  
2065 Idaho St., Elko, NV 89801

# TURN-KEY TRAINING FOR DRILLERS, BLASTERS, ENGINEERS, AND MANAGEMENT!

[WWW.RESPEC.COM/ELKO](http://WWW.RESPEC.COM/ELKO)

## ➤ CONTACT US

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