

## **Explosives Research Laboratory Safety Training Plan**

### **Opener**

-Explosives will kill you if not properly respected, therefore, safety is our #1 priority at AXPRO. Deviations from established safety rules put everyone at the site at risk.

### **Basic Safety**

- Required PPE
  - hard hat, steel toes, safety glasses, safety vest, ear protection
- Prohibited activities
  - Smoking
  - Talking on cell phone
  - consumption of alcohol
  - talking while blaster in charge or blaster's helper is giving instructions
- Speed limit
  - 5 MPH

### **Procedures**

- Who need to be contacted?
  - By Blaster in charge
    - 24 hours in advance
      - Written notification to CSM and Idaho Springs
    - 60 minutes prior to test
      - Notify via phone call Sheriff and fire department
    - Before and after each blast
      - Notification to Mine manager
  - By Student
    - When arranging test
      - Dr. Petr
    - When arriving at test site
      - Sign in with blaster in charge or blaster's helper
    - Before each test
      - Visual contact with blaster in charge
    - When leaving test site
      - Sign out with blaster in charge or blaster's helper
- What will happen before testing can begin
  - Walk perimeter
    - make sure no body/nothing is within blasting area
    - Check condition of fence
  - Initial head count
    - done by blaster's helper when people arrive

- Check all equipment
  - testing is worthless without instrumentation
- Seismograph setup
  - We must record ground vibration and noise levels from each blast
- Visitor count
  - head count after visitors have been evacuated to safe area
- Visitor location during testing
  - in or around trailer
  - must be with supervisor
- test personnel count
  - head count of those actively involved with testing
- Verbal or visual confirmation from blaster helpers that area is clear
  - physically secured
  
- Blasting signals
  - Five-minute warning siren
    - one-minute duration tone five minutes before blast
  - One-Minute Siren
    - one-minute duration immediately before blast
  - “FIRE IN THE HOLE”
  - Visual signals
    - All clear/ OK
      - wave hard hat above head with one hand
      - signal to blaster in charge before test that area is clear
      - All Clear signal after test
        - allowed to re-enter blast area
    - Stop
      - Wave both arms above head so that they cross
      - All activity will be stopped until problem is fixed
  
- Post-test procedure
  - To go see blast results
    - Wait for blaster in charge’s “All Clear”
    - Blaster in charge will wait for gasses to clear
    - Blaster in charge will check area for misfires
  - Clean up
    - Each group is responsible for cleaning up debris from their test
  
- Leaving Test site
  - Check back in PPE
  - record test results
  - ensure cleanliness of site and area around it
  - Check out with blaster in charge
  - Say goodbye to others present

**Magazine**

- ATF Type 1 permanent magazine
- 2 ton capacity
- Only licensed blasters can check explosives out of magazine
  - blaster in charge
- Detonators and boosters/other explosives must be kept separate during transportation
  - Prevent Sympathetic detonation if detonators go off
- During testing
  - Stored in Type III magazine next to pit

**Other:**

- NEVER be closer than 15 feet from charge without explicit approval from Blaster in Charge
- NEVER handle any explosives without explicit approval from blaster
- ALWAYS follow the instructions of the Blaster in Charge and test site staff to the letter and without argument
- ANY violation of a safety rule will result in immediate and permanent expulsion from the test site
- Safety Rules are for the protection of everyone at the ERL.

**Review:**

- NO cell phones
- NO smoking
- NO drugs or alcohol
- ALWAYS listen to and obey Blaster in Charge and Blasters Helpers
- ALWAYS wear ALL required PPE
- ANY safety violation will result in immediate and permanent expulsion from the test site
- THIS IS YOUR ONLY WARNING!!!!