

October 2017 Newsletter

Hazard Recognition Challenge—NIOSH

NIOSH has developed an on-line application that you may use to test your proficiency at identifying hazards in an aggregates mining environment. More information regarding access and use of the application appears in the article below that we clipped from the CDC/NIOSH webpage. It's all part on a study designed to identify how we identify hazards, and to produce feedback to the industry on techniques that may improve hazard recognition in the workplace. There are four current 360-degree scenarios available to challenge your hazard recognition skills available on the on-line version. NIOSH expects to have a downloadable version available in Spring, 2018 with over 30 scenarios.



Authors: J Hrica, B Eiter, JS Britton, JE Fritz, GP Cole
<https://www.cdc.gov/niosh/mining/works/coversheet2013.html>

What is the Hazard Recognition Challenge?

The Hazard Recognition Challenge allows you to perform a virtual workplace examination on four locations at a surface stone operation: the pit, the plant, the shop, and a roadway. Each location contains multiple hazards. Your goal is to find as many hazards as possible at that work location.

What are the benefits of the Hazard Recognition Challenge?

You can use the information from this App to increase your knowledge and awareness of hazards found at a surface stone operation. Once you finish the challenge, the App will present your results so that you know which hazards you successfully identified and those that you missed. In addition, the App will provide a brief explanation of each hazard along with supplemental information such as accident and injury statistics from the Department

of Labor (DOL), relevant Mine Safety and Health Administration (MSHA) standards, and links to tools you can use to further your learning about mine site hazards. We encourage you to review this supplemental information and use it to start a discussion about a specific hazard or a type of hazard during pre-shift safety meetings or toolbox talks.

About the Hazards

Industry subject matter experts reviewed each hazard included in the panoramic scenes to ensure that they are true to life and create an accurate depiction of hazards found in the real working environment. As you complete the challenge, you may find additional unidentified hazards within the scenes. We will be adding a feature to show you other hazards users have frequently identified during the challenge, so check back soon.

How to use this application

To start the challenge, click on the Begin button below. You will be taken to the first hazard recognition location—the shop.

- Click the arrow buttons on the panoramic scene or press your keyboard arrow keys to pan around the 360-degree image. You may also use your mouse to pan by dragging the cursor over the image.
 - To zoom in and out, click the plus (+) and minus (-) buttons on the panoramic scene or rotate your mouse wheel.
 - Click on any hazards you spot. A marker will appear in the location you click. If you add a marker by mistake, you can click on it to remove it.
- You have two minutes to identify hazards at each location. If you finish a location early, click on the Next button at the bottom right of the screen to proceed to the next challenge. If you finish the final challenge early, click on the Finish button at the bottom right of the screen. If you do not finish a challenge within two minutes, the App will automatically take you to the next challenge, or to the results page, with your results recorded.

For additional help, refer to the Help Guide for an overview of the features and functions.

[BEGIN](#)

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More Delays in Implementing M/NM Workplace Exams MSHA Seeks Comments

MSHA has taken official action to delay the implementation of the revisions to the Workplace Exam rule (30 CFR: 56/57.18002) until June 2, 2018. One reason for the delay is so that MSHA can collect comments from stakeholders regarding two proposed edits to the final rule that was scheduled to become effective earlier this month.

Final Rule:

§ 57.18002 Examination of working places.

- (a) A competent person designated by the operator shall examine each working place at least once each shift before miners begin work in that place, for conditions that may adversely affect safety or health.
- (b) A record of each examination shall be made before the end of the shift for which the examination was conducted. The record shall contain the name of the person conducting the examination; date of the examination; location of all areas examined; and description of each condition found that may adversely affect the safety or health of miners.

Proposed Changes

§ 57.18002 Examination of working places.

- (a) A competent person designated by the operator shall examine each working place at least once each shift before work begins **or as miners begin work** in that place for conditions that may adversely affect safety or health.

(b) The record shall contain the name of the person conducting the examination; date of the examination; location of all areas examined; and description of each condition found that may adversely affect the safety or health of miners **and is not corrected promptly.**

The proposed change in paragraph (a) would permit workplace exams to be performed simultaneously as miners enter the work area so long as proper notification of miners is made before exposure of a miner or miners to hazards. The proposed change in paragraph (b) would relieve the examiner of the responsibility of recording hazards that were promptly corrected after the exam. According to MSHA, both changes were proposed to relieve some of the burden associated with the final rule.



MSHA believes these changes to the 2017 rule would not reduce the protections afforded miners; therefore, benefits would remain unchanged, which were unquantified in the 2017 rule, since MSHA was unable to separate the benefits of the new requirements under the 2017 rule from those benefits attributable to conducting a workplace examination under the existing standard. Thus, net benefits for this proposed rule would be positive due to the cost savings.

MSHA is reopening the comment period to solicit comments on limited changes to the final rule .

Comment date:



Comments must be received or post-marked by midnight Eastern Standard Time (EST) on November 13, 2017.

Hearing dates:

Date/time	Location	Contact No.
October 24, 2017, 9 a.m	Mine Safety and Health Administration Headquarters, 201 12th Street South, 7 West Conference Rooms, Arlington, VA.	(202) 693-9440
October 26, 2017, 9 a.m	75 South West Temple, Salt Lake City, UT 84101	(801) 531-0800
October 31, 2017, 9 a.m	Sheraton Birmingham Hotel, 2101 Richard Arrington Jr. Boulevard North, Birmingham, AL 35203.	(205) 324-5000
November 2, 2017, 9 a.m	Wyndham Pittsburgh University Center, 100 Lytton Ave., Pittsburgh, PA 15213	(412) 682-6200

Continued on page 3

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From Page 2

ADDRESSES:

Submit comments and informational materials, identified by RIN 1219–AB87 or Docket No. MSHA–2014–0030, by one of the following methods:

- *Federal E-Rulemaking Portal:*
<https://www.regulations.gov>. Follow the online instructions for submitting comments.
- *Email:* zzMSHA-comments@dol.gov.
- *Mail:* MSHA, Office of Standards, Regulations, and Variances, 201 12th Street South, Suite 4E401, Arlington, Virginia 22202–5452.
- *Hand Delivery or Courier:* 201 12th Street South, Suite 4E401, Arlington, Virginia, between 9 a.m. and 5 p.m. Monday through Friday, except Federal holidays. Sign in at the receptionist's desk on the 4th floor East, Suite 4E401.
- *Fax:* 202–693–9441.

To see the full text of the Federal Register volumes regarding the Workplace Exams, explore the Federal Register website at:

<https://www.federalregister.gov/index/2017>

MSHA PROGRAM POLICY **MANUAL—COAL**

§75.1106 Welding, cutting, or soldering with arc or flame underground.

All welding, cutting, or soldering with arc or flame in all underground areas of a coal mine shall, whenever practicable, be conducted in fireproof enclosures. Welding, cutting, or soldering with arc or flame in other than a fireproof enclosure shall be done under the supervision of a qualified person who shall make a diligent search for fire during and after such operations and shall, immediately before and during such operations, continuously test for methane with means approved by the Secretary for detecting methane. Welding, cutting, or soldering shall not be conducted in air that contains 1.0 volume per centum or more of methane. Rock dust or suitable fire extinguishers shall be immediately available during such welding, cutting or soldering.

75.1106 Welding, Cutting, or Soldering with Arc or Flame Underground

This standard requires, among other precautions, that work be done under the supervision of a qualified person and that testing for methane be conducted immediately before and continuously during cutting, welding, and soldering operations. The tests for methane must be made in locations where methane is likely to exist, and in no case is cutting, welding, or soldering permitted in an atmosphere that contains 1.0 percent or more methane.

A person will be considered qualified for testing for methane and for oxygen deficiency if: 1) the person has been qualified for this purpose in the State in which the mine is located, or 2) the person has been qualified for this purpose by the Secretary. Notwithstanding the provisions of 1) and 2), no person shall be a qualified person for testing for methane unless the person demonstrates to the satisfaction of an authorized representative of the Secretary that he or she is qualified to test for methane with a portable methane detector approved by MSHA.

"Continuously" as used in this section is interpreted to mean that a qualified person is to remain at the worksite, and tests for methane must be made at regular and frequent intervals. In mines where welding, cutting, or soldering with a flame is performed, the inspector should observe at least one such operation to determine if the frequency of such tests is sufficient to ensure a systematic and effective means of monitoring the methane content in the air in the vicinity of the worksite.

Methane tests are critical for safe cutting, welding or soldering in an underground coal mine and are somewhat different from methane tests used for general mine ventilation. While § 75.323(a) specifies that tests for methane concentrations must be made at least 12 inches from the roof, face, ribs and floor, this distance requirement is not applicable to welding, cutting or soldering activities performed under § 75.1106. MSHA's policy on § 75.1106 clearly states that methane tests conducted under this section must be made in locations where methane is likely to exist, and in no case is cutting, welding or soldering permitted in an atmosphere that contains 1.0 percent or more of methane. Since the face, roof, ribs, floors and any fully or partially enclosed areas of an underground coal mine are locations where methane is likely to exist, methane tests must also be made at or near the surface of these areas (not 12 inches away) and within any fully or partially enclosed areas that may be exposed to the aforementioned

ignition sources. Welding, cutting or soldering activities are prohibited if any methane levels are 1.0 percent or greater within the affected areas. MSHA recommends the use of probes for methane detectors to take some of these measurements.

In a longwall mining system, adequate testing, cleaning, and rock dusting will generally require raising the chain conveyor and securing it above the mine floor before cutting, welding, or soldering operations begin. In this way, the space beneath the conveyor line can be ventilated and tested for methane, accumulated combustibles can be removed, and the area can be thoroughly rock dusted. Where raising the conveyor line is not practicable, other measures may be necessary to minimize the danger of ignitions.

During and after the cutting, welding, or soldering, this section also specifies that a diligent search be made for fire. This is a particularly important precaution because longwall chain conveyor line components or covers on other types of equipment may obscure a small fire.

§77.1103 Flammable liquids; storage.

(a) Flammable liquids shall be stored in accordance with standards of the National Fire Protection Association. Small quantities of flammable liquids drawn from storage shall be kept in properly identified safety cans.

(b) Unburied flammable-liquid storage tanks shall be mounted securely on firm foundations. Outlet piping shall be provided with flexible connections or other special fittings to prevent adverse effects from tank settling.

(c) Fuel lines shall be equipped with valves to cut off fuel at the source and shall be located and maintained to minimize fire hazards.

(d) Areas surrounding flammable-liquid storage tanks and electric substations and transformers shall be kept free from grass (dry), weeds, underbrush, and other combustible materials such as trash, rubbish, leaves and paper, for at least 25 feet in all directions.

77.1103 Flammable Liquids; Storage

Reference is made to the standards of the National Fire Protection Association and the applicable portion in Code No. 30--Flammable and Combustible Liquids. The basic requirements for storing flammable liquids are:

1. Buildings or rooms within buildings in which flammable and combustible liquids are stored shall be of noncombustible structure, including walls, floor, and ceiling; properly ventilated and, where possible, located away from stair-

ways or exits. If heated, only electric heaters, hot water, or low-pressure steam shall be used.

2. Drums and other containers stored in the open shall be located to reduce the spread of fire to other materials in storage or other property areas. The surrounding area shall be kept free of combustible materials, brush, etc.

"Safety can" shall mean an approved container, of not more than a 5-gallon capacity, having a spring-closing lid and spout cover and so designed that it will safely relieve internal pressure when subjected to fire exposure.

MSHA PROGRAM POLICY MANUAL—METAL/NON-METAL

§56/57.4503 Conveyor belt slippage.

Belt conveyors within confined areas where evacuation would be restricted in the event of a fire resulting from belt-slippage shall be equipped with a detection system capable of automatically stopping the drive pulley. A person shall attend the belt at the drive pulley when it is necessary to operate the conveyor while temporarily bypassing the automatic function.

56/57.4503 Conveyor Belt Slippage and Detection System

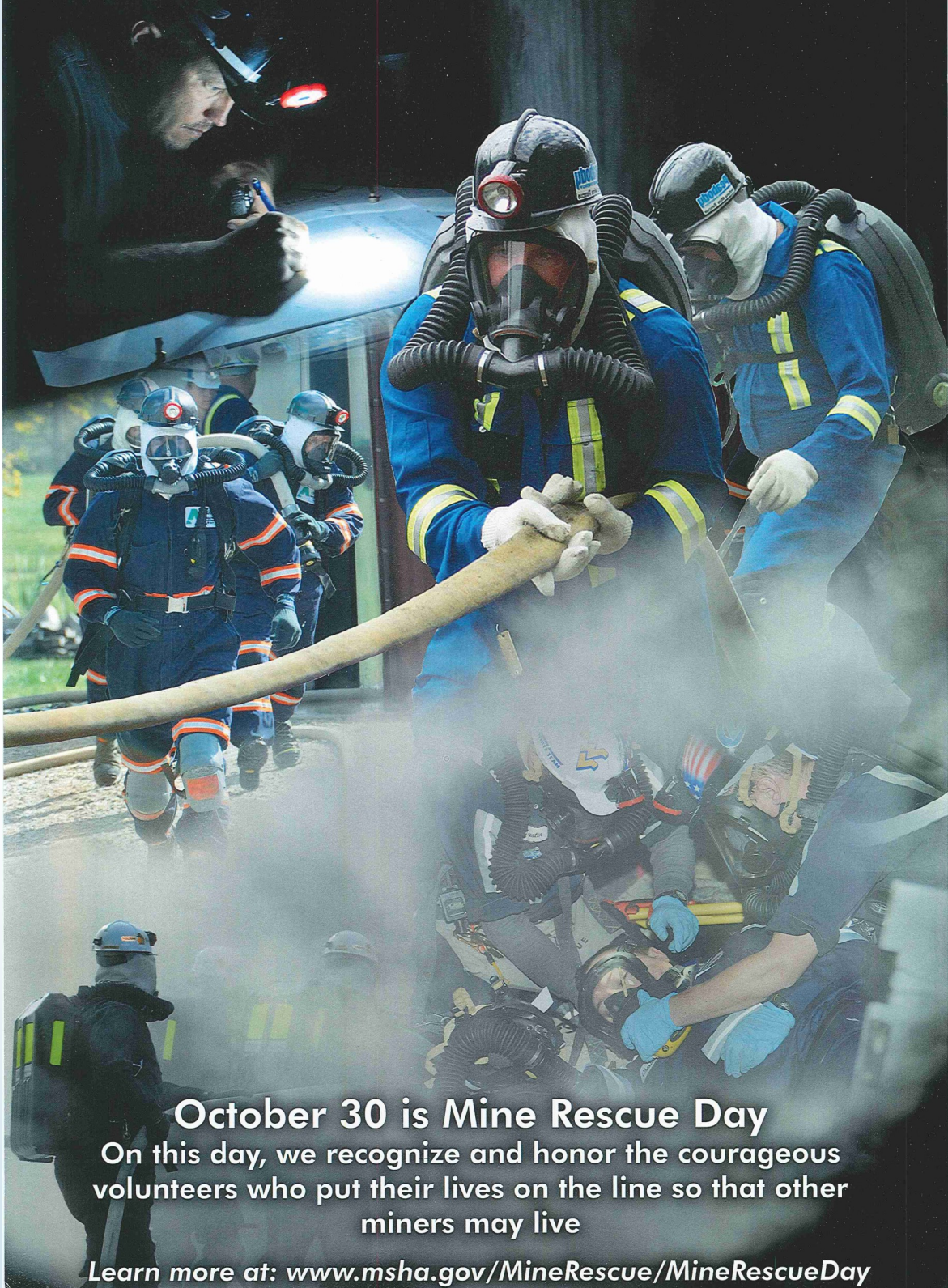
This standard requires that belt conveyors shall be equipped with a detection system capable of automatically stopping the drive pulley in the event of excessive slippage of the belt, where ignition of the belt could create a hazard to personnel. The detection systems required by this standard are available on an over-the-counter basis from several manufacturers.

For surface operations, areas that could create a hazard to personnel in the event of a fire include the following:

1. Surge tunnels.
2. Conveyor belts located in areas where other combustible or flammable materials are stored within 25 feet of the belt. This is to prevent a conveyor belt fire from spreading and becoming a large and more serious fire. The policy is consistent with distances used as safeguards in the electrical and explosives standards.
3. Any restricted area where a conveyor belt fire could hinder the escape of personnel who normally work in that area.



***When a mine emergency strikes, they
are always ready to answer the call***



October 30 is Mine Rescue Day

**On this day, we recognize and honor the courageous
volunteers who put their lives on the line so that other
miners may live**

Learn more at: www.msha.gov/MineRescue/MineRescueDay

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**“Visualize this
thing that you
want.**

**See it, feel it,
believe in it.**

**Make your mental
blueprint, and
begin to build!”**

- Robert Collier -

Mining Safety Board

The Mining Safety Board met on September 8 in Albuquerque following the NMMA convention. The board is looking into amending some of the rules for certification and recertification of coal mine officials. Jeff Gordon, Chair formed a committee for the purpose of drafting revised rules. For a copy of the draft meeting minutes, contact Deb McVey at Debora.mcvey@nmt.edu or 575-835-5460



The next scheduled MSB meeting is planned for February 1, 2018 at a time and location to be announced in the Farmington area. Inquiries can be directed to Board Chair Jeff Gordon at:

jeffgordon.nmmsb@yahoo.com.

President Trump Nominates David Zatezalo Assistant Secretary of Labor for MSHA

President Trump has nominated David Zatezalo to head the Mine Safety and Health Administration. Mr. Zatezalo is a former coal company executive who began his mining career as a union miner in 1974. His resume' includes posts with Consolidation Coal Company, Hopedale Mining, Southern Ohio Coal Company, Windsor Coal Company and Rhino Resources. He is a member of the Mine Recue Veterans of Pittsburgh.



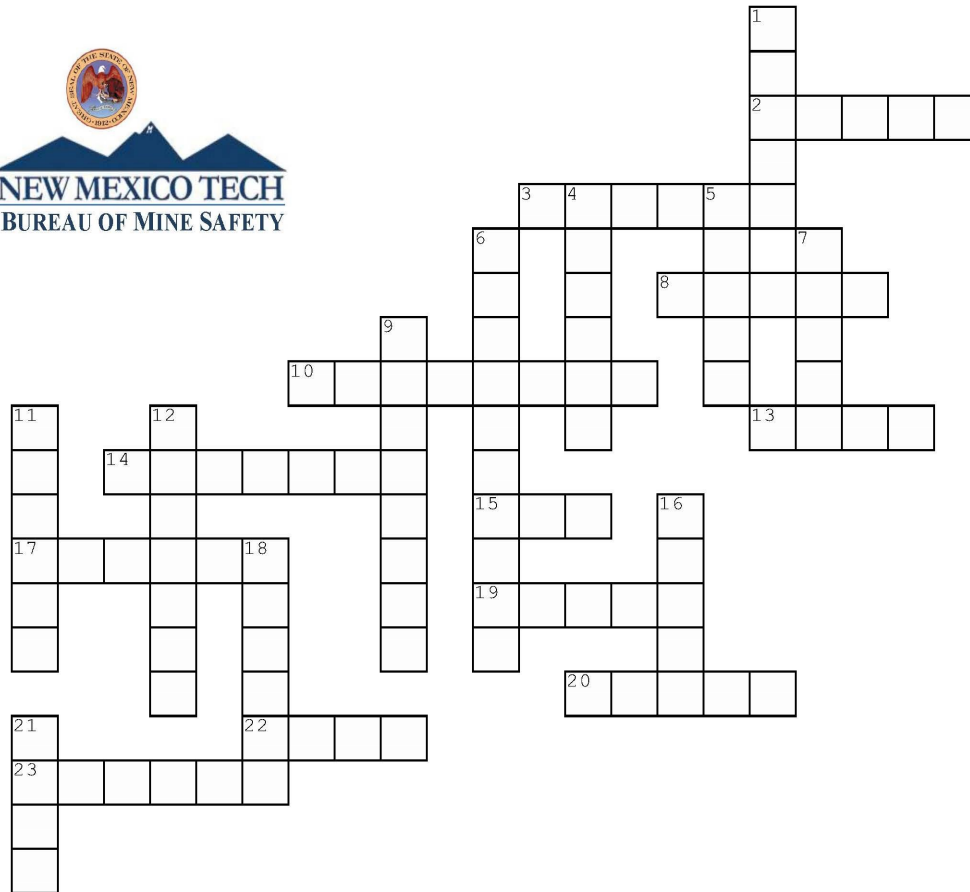
In addition to his union miner start, Mr. Zatezalo has served as a foreman, superintendent, general manager, VP of operations and CEO. He earned a degree in mining engineering from West Virginia University and is a Professional Engineer. His MBA was earned at Ohio University. He is a past chairman of the Ohio Coal association.

President Trump announced the nomination on September 2 and he Senate confirmation process is underway. Currently the agency is headed by Wayne Palmer, Deputy Assistant Secretary for Policy—a Trump appointee and by Patricia Silvey, Deputy Assistant Secretary for Operations—a career MSHA employee.

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Conveyor Safety

Complete the crossword below



Created with TheTeachersCorner.net [Crossword Puzzle Generator](http://TheTeachersCorner.net/Crossword-Puzzle-Generator)

Across

2. Warning used before starting a conveyor
3. Two ends of a belt conveyor are joined by a _____
8. Physical barrier to prevent contact with moving parts
10. Where material is passed from one conveyor to another
13. Most common conveyor known as a _____ conveyor
14. Common name for an elevated walkway along a conveyor
15. A hand, tool, clothing and other materials may be caught in a _____ point
17. Used on conveyors to control effects of wind and weather and may be placed to serve as a guard
19. A cord that (when pulled) will stop the conveyor (no hyphen)
20. A _____ conveyor uses a spiral shaft to move material
22. Used to secure electrical power on a conveyor during maintenance
23. Non-powered rollers that support a conveyor belt

Down

1. A device designed to hold a belt conveyor in place
4. Large roller located at the head, tail, drive, or take-up
5. Device that helps direct the transfer of material from one conveyor to another
6. Guarded location where one may safely pass to the other side of a conveyor
7. Mechanism that powers a belt conveyor
9. A device designed to prevent roll-back on a sloped conveyor
11. Devices used to hold a belt in place during splicing
12. A _____ device keeps tension on a belt conveyor (include hyphen)
16. Device used to remove material adhered to a belt
18. Likely when a transfer point is overloaded (plural)
21. Friction on a belt conveyor may result in a _____

Technology

News

NIOSH MINING PROGRAM

Milestones in Mining Safety and Health Technology

No. 558

July 2017

Safety Pays in Mining: a Web Application that Demonstrates the Financial Impact of Injuries

Summary

The Safety Pays in Mining web application uses aggregate injury cost data to show cost distributions for typical injuries that can affect mine workers. The cost data are derived from a decade of compensation claims filed by mine workers in Ohio. This web application brings awareness to companies about the unknown costs of injuries and the distribution of these costs.

By John R. Heberger and Joseph Schall

Background

The costs of specific types of occupational injuries in mining are not well known. This information is generally not shared between mining companies nor readily provided by insurance companies. Therefore, companies only have cost information based on previous experience with their own employees. As one example, if a mine never experienced a finger amputation for one of its workers, it would not be aware of the possible costs of this type of injury. In addition, injury costs are unique in that the cost distribution is so wide—just using an average cost does not provide adequate information. Some injuries involve tremendously high costs. Even though the risk of these extremely high-cost injuries is low, mines need to be aware of their potential impact on their financial health.

The Safety Pays in Mining web application (see Figure 1) developed by the

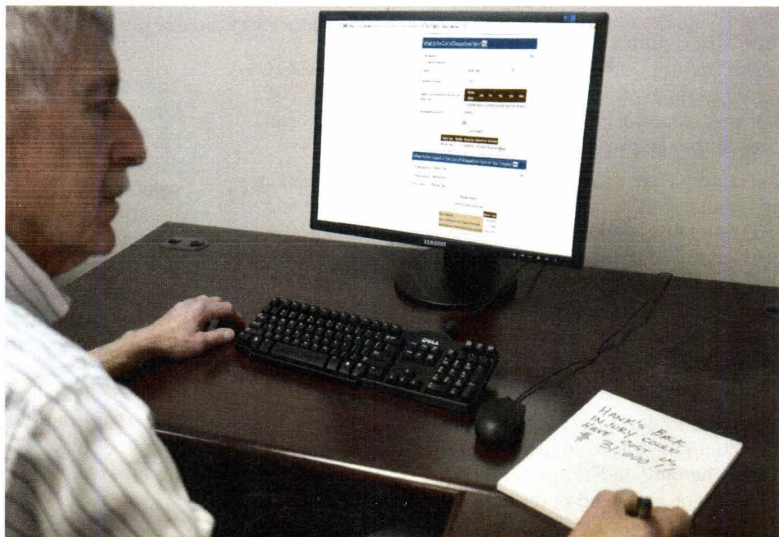


Figure 1: A user calculates the potential cost of an injury using Safety Pays in Mining.

National Institute for Occupational Safety and Health (NIOSH) helps mines to determine potential injury costs and the distribution of these costs. The application groups injuries by type, either by the cause of injury or by the nature of the injury itself. When the user selects one of over 30 injury types, the application provides information on the distribution of costs of workers' compensation claims for that type of injury. Based on other user inputs, the program will estimate the total costs of all projected injuries, including an estimate of additional "indirect" costs, the impact of total injury costs on profits, and examples of ways that companies could spend the savings resulting from preventing injuries.

How the Application Was Developed

To calculate direct costs, which include medical expenses and lost-time payments, NIOSH researchers obtained cost data for specific injuries from the Ohio Bureau of Workers' Compensation. Compensation claims for (de-identified) mining industry workers from 2001 to 2011 were used for the cost estimates. These claims included both medical-only and lost-time claims for each injury. Only injury types with more than 10 claims were included.

In order to provide a realistic injury cost estimate, researchers also calculated indirect cost estimates. These are costs to the employer which are generally not covered by insurance. Such costs could

Photo by NIOSH

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include, for example, costs of reduced productivity due to disruption of work or work limitations during injury recovery, replacing damaged equipment, and temporary or permanent replacement of injured workers. The total cost of an injury is the sum of the direct and indirect costs.

In the application, all costs were adjusted to 2015 dollars. Future versions of Safety Pays in Mining will update costs to the most recent calendar years.

Using Safety Pays in Mining

To use the Safety Pays in Mining web application, you select options from drop-down menus in four sections representing (1) common injuries and activities, (2) cost of injury, (3) impact of injury cost on profits, and (4) how the company could spend the cost savings from injury prevention. Default values are automatically included in most fields to allow you to make general estimates based on Ohio mining claims data, or in case the desired specifics on your company's injuries are not known.

In the "Most Common Injuries and Work Activities for 2015" section, you choose the commodity of interest and an injury summary for that commodity is displayed for 2015. This shows what the most common injuries were and what miners were doing when injured.

The section "What is the Cost of Occupational Injury?" is the main feature of the application (see Figure 2). The user first selects one of two lists of injury types: injury by "nature" or injury by "cause." Injury by nature refers to the type of physical damage to the body, such as back sprains or finger amputations. Injury by cause refers to the manner in which the injury was inflicted, such as exposure to electricity or being struck by an object or equipment. The user selects an injury type, and the distribution of injury costs for that type is displayed.

The user then selects the number of injuries of this type that may occur in the future. In the next step, the user needs to consider the provided information on the distribution of costs, along with the expected number of injuries, in order to select an average cost per claim to enter. The best cost per claim to enter is a matter of judgment that depends in part upon the user's concern about the possibility of experiencing a very high-cost claim. It is also important to consider the expected number of injuries, because a higher number of claims results in a higher chance of a very expensive claim. A note in the web application suggests percentile cost figures to use based on number of total injury claims. You can select the mean cost or one of the cost percentiles for the specific injury type. The report then shows a summary of the injury, the number of injuries, the direct cost, the indirect cost, and the total cost. The user can repeat this process for each injury type and then generate a summary report for all injuries.

For More Information

For more information on Safety Pays in Mining, contact John R. Heberger (JHeberger@cdc.gov) or the NIOSH Mining program (mining@cdc.gov).

To receive NIOSH documents or for more information about occupational safety and health topics, contact: **1-800-CDC-INFO (1-800-232-4636), 1-888-232-6348 (TTY)**, or request information at the CDC website at www.cdc.gov/info, or visit the NIOSH website at www.cdc.gov/niosh.

DHHS (NIOSH) Publication No. 2017-170

Disclaimer: Mention of any company or product does not constitute endorsement by NIOSH.

What Is the Cost of Occupational Injury? Hide

Injury - Nature
 Injury - Cause

Injury - Nature: Sprains - Back

Number of injuries: 1

Select a cost percentile or enter your own direct cost:

Median (50th)	25th	75th	90th	95th	Mean
\$1,400	\$540	\$5,200	\$16,300	\$31,800	\$8,700

Show Note

Estimated direct cost per claim (\$): \$10,000

Add

Cost Report

Injury Type	Direct Cost per Claim	Number	Direct Cost	Indirect Cost	Total Cost		
Sprains - Back	\$10,000	1	\$10,000	\$21,200	\$31,200	Remove	Edit

Figure 2: A screenshot from the application demonstrates that the total cost of a single back injury could be over \$31,000.

The section "What is the Impact of the Cost of Occupational Injury on Your Company?" shows how injury costs can affect profits. You enter your company's profit margin and annual sales, or accept the default values based on the commodity selected in the "Most Common Injuries and Work Activities for 2015" section. The resulting impact report shows the total injury cost, the total injury cost as a percentage of annual sales, and the additional sales needed to pay for the injury total cost. The section "How Could Your Company Spend Its Savings from Preventing Injury?" shows different ways your company could use the money otherwise spent on injuries. You can use the default values or input the average amount that your company pays for an annual hearing loss prevention program, a pair of boots, or a hard hat. Based on these values, the web application displays how many of each could be purchased if the injuries were prevented.

How Mines Can Benefit from Using Safety Pays in Mining

This web application educates users on a wide range of occupational injury costs. Mine companies will find it beneficial to see the distribution of workers' compensation injury costs as well as the indirect costs which are often overlooked. The application demonstrates that even a common injury has the potential to be extremely expensive. Safety Pays in Mining can be used by mine companies to help with determining possible injury costs and prioritizing health and safety interventions.

Where to Find Safety Pays in Mining

The web application is now available for use on the NIOSH Mining webpage at: <https://www.cdc.gov/niosh/mining/content/economics/safetypays.html>.



September 2017 Newsletter



The 2018 New Mexico Mine Health & Safety Conference will be held in Albuquerque, N.M. **May 9 -11 2018**



Sheraton Albuquerque Uptown
2600 Louisiana Blvd, NE
Albuquerque, NM 87110
844-395-9645

Reserved Room Discount



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New Mexico Mine Health and Safety Conference

2018 Scholarship



A \$500 scholarship will be awarded to a student of a New Mexico institution of higher education who is enrolled in a mine health or safety curriculum or who has expressed an interest in a career in mine safety or health.

An application form can be picked up at the Financial Aid Office or request a form by emailing nmmhsc@gmail.com. Applications are due by January 1, 2018. The completed application should be submitted to:

New Mexico Mine Health & Safety Conference
Attention: Scholarship Committee
P.O. Box 1754
Socorro, NM 87801.

The scholarship will be awarded at the 2018 New Mexico Mine Health & Safety Conference, May 9-11, 2018. We would like the recipient of this scholarship to attend the conference if it fits into his or her schedule.

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NEW MEXICO MINE HEALTH AND SAFETY CONFERENCE

SCHOLARSHIP APPLICATION

Personal Information

Name:

Date of Birth:

Address:

Telephone:

Email address:

Education Information

High School:

College/University:

Course of Study:

Expected Graduation Date:

GPA:

Extracurricular Activities:

Career Aspirations

Upon Graduation:

Five Years Post-Graduation:

Ten Years Post-Graduation:

Essay

(Please attach a short essay [200-400 words] that describes your career interest in mining health and safety)

Signature:

Date:

Mail application to: NMMHSC, ATTN: Scholarship Committee, P.O. Box 1754, Socorro, NM 87801

New Mexico Mine Health and Safety Conference Inc. is a tax-exempt 501(c)(3) non-profit organization