

# MSHA Quarterly Stakeholder Meeting

United States Department of Labor  
Mine Safety and Health Administration



# Agenda

## I. Welcoming Remarks

- Assistant Secretary Christopher Williamson

## II. Stakeholder Presentations

- Chris Atkins | Matrix Design Group
- Wayne Persinger | Alpha Natural Resources

## III. Written Safety Program on Surface Mobile Equipment

- Patricia W. Silvey | Deputy Assistant Secretary for Operations
  - Office of the Assistant Secretary for Mine Safety and Health
- Brian Goepfert | Administrator
- Timothy Watkins | Deputy Administrator
  - Mine Safety and Health Enforcement

## IV. Launch

- Will Drexler | MSHA's Health Locator Tool

## V. General Q&A



# Welcoming Remarks

Assistant Secretary  
Christopher Williamson



**Mine Safety and Health Administration**  
United States Department of Labor

# Stakeholder Presentation

Chris Atkins | Mining Sales Manager  
Matrix Design Group, LLC



**Mine Safety and Health Administration**  
United States Department of Labor

# OmniPro<sup>®</sup>

Innovative technology. Real world application.



## Safety Technology for Surface Mobile Equipment

*Chris Adkins | Mining Sales Manager*

Ph: 304.546.5946

[Chris.Adkins@matrixteam.com](mailto:Chris.Adkins@matrixteam.com) | [MatrixTeam.com](http://MatrixTeam.com)





Introducing  
**Vizion AI**

## About Matrix Design Group

For more than 15 years, Matrix has proven to be a leader in collision avoidance and proximity detection system technology. From underground mines to surface operations, Matrix has built a foundation of knowledge in the harshest of conditions and its product lines are now across all industries.

- Headquartered in Newburgh, Indiana
- Matrix is a wholly owned subsidiary of Alliance Resource Partners
- Matrix Quality Management System (QMS) is ISO 9001:2015 certified by Intertek

### **The Matrix Mission**

Matrix develops, supplies, and supports technology that enhances productivity and improves safety in industrial, energy, commercial, and mining environments.

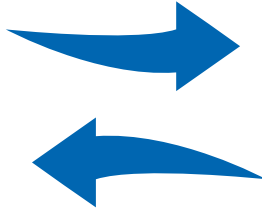


## The OmniPro Technology Platform

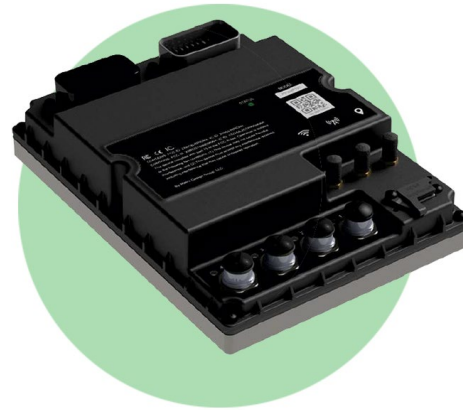


**The EYES**  
OmniPro Vision AI

OmniPro provides power and direction to Vizion A.I. cameras.

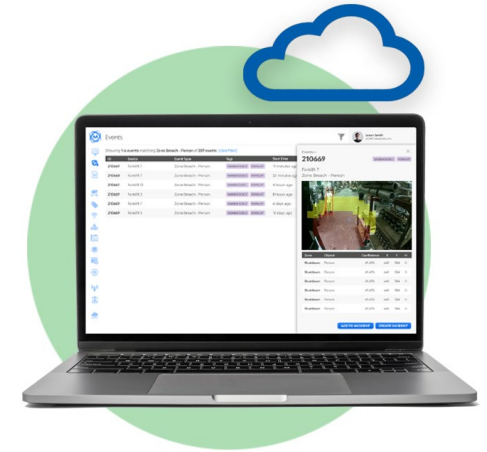


Vizion A.I. cameras report real time data back to OmniPro.



**The POWER**  
OmniPro Hub

OmniPro delivers analytics to InFocus.



**The BRAIN**  
OmniPro InFocus

OmniPro's **Vizion AI** camera is compact and highly durable for harsh, high-vibration environments. Each camera can monitor up to five fully customized zones.

OmniPro's **Hub** is a centralized networking device that serves as a point of connectivity for multiple devices. Each OmniPro System can operate up to four cameras.

OmniPro's **InFocus** cloud-based software is an application that provides 24/7 access to software tools and a dashboard with real-time metrics and analytics.



## Visual Artificial Intelligence (A.I.) Collision Avoidance System

### Accurate, high-speed detection of people and equipment

- NO TAGS REQUIRED
- Stand Alone System for small or large installations
- Optimized for alerting accuracy – item to alert on
- Custom zone set-ups to match the facility need

### Rugged and water/weather resistant

- IP67 Rated

### Cloud Connectivity

- Wi-Fi, Cellular LTE, Bluetooth and GPS provides data access and data intelligence\* reports

\*Requires subscription



## The EYES – OmniPro® Vision AI

### Fast identification rate and computing system

When a one-second error can mean **the difference between a near miss and a lost-time injury**, you need the most advanced, accurate collision avoidance system working for your safety team.

### Accurate, high-speed detection of people and equipment

- High speed inbound image processing rate
- Optimized for alerting accuracy
- 30 Frames per second adjustable for facility needs

### Innovative, compact cameras and processing hub with powerful new features:

- Each camera can generate up to five fully customizable alert zones that can apply to different objects and perform different actions
- Alerts on pedestrians, vehicles, signage and more
- Cloud Connectivity (Wi-Fi, Cellular LTE, Bluetooth and GPS) provides data access and decision intelligence reports

Adjusts if the vehicle is in low-light conditions and when it transitions from light to darkness

Sensor reports if a camera is blocked or obstructed

Gorilla® Glass Lens Cover

New Compact Design

L = 1.86"  
W = 2.75"  
H = 5.00"

Rugged and water/weather resistant



## The Power – OmniPro® Hub

### OmniPro Centralized Networking Device

- Designed to minimize false positives and nuisance alerts
- Identifies pedestrians in any posture, including standing, crouching, kneeling, partial view, as well as people wearing PPE
- Can operate up to four cameras
- Visual and audible alerts
- Multiple I/O connections – five digital inputs and five relay outputs
- Wide operating Voltage of 9-48 VDC
- Camera's auto-switch to monitor with reported hazards
- Easily integrates with most OEMs



Standard system can operate up to four cameras with an expansion port for additional cameras

## The Brain – OmniPro InFocus

### OmniPro® Cloud Analytics

- Records and stores zone breach incidents with photo and time-stamps
- Pre-event and post-event image capture capabilities – configurable up to five seconds before and five seconds after an event
- Analytics suite, featuring images, events and fleet management
- Provides real-time, full-data capture with analysis; average daily breaches per machine; trending breaches over time; event graphics
- Users can access data on-site or remotely 24/7/365
- Cloud system with **premier decision intelligence\*** can report:
  - Near misses
  - Patterns, such as zone breach increases first thing in the morning and at lunchtime
  - Most dangerous times, locations
  - Safest – and least safe - drivers



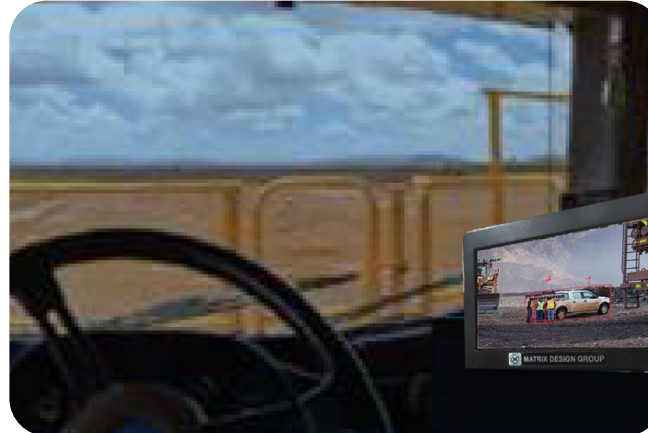
A web-based application that provides 24/7 access to software tools and a dashboard with real-time metrics and analytics

## OmniPro® - System Options



### Machine Integration

- Slows machine (Yellow Zone Alert) or deactivates accelerator pedal (Red Zone Alert)
- Can create speed zones throughout a facility, including busy intersections, doorways and areas with high likelihood of incidents



### In-Cab Monitor

- Can support up-to-four camera feeds simultaneously
- Video feed automatically switches to whichever device has a zone breach
- Back-up camera support



### Pedestrian Alert Lighting System

- Highly visible light bar alerts pedestrians and other vehicles to alert (Red) and warning zone (Yellow) breaches. Sound 104db

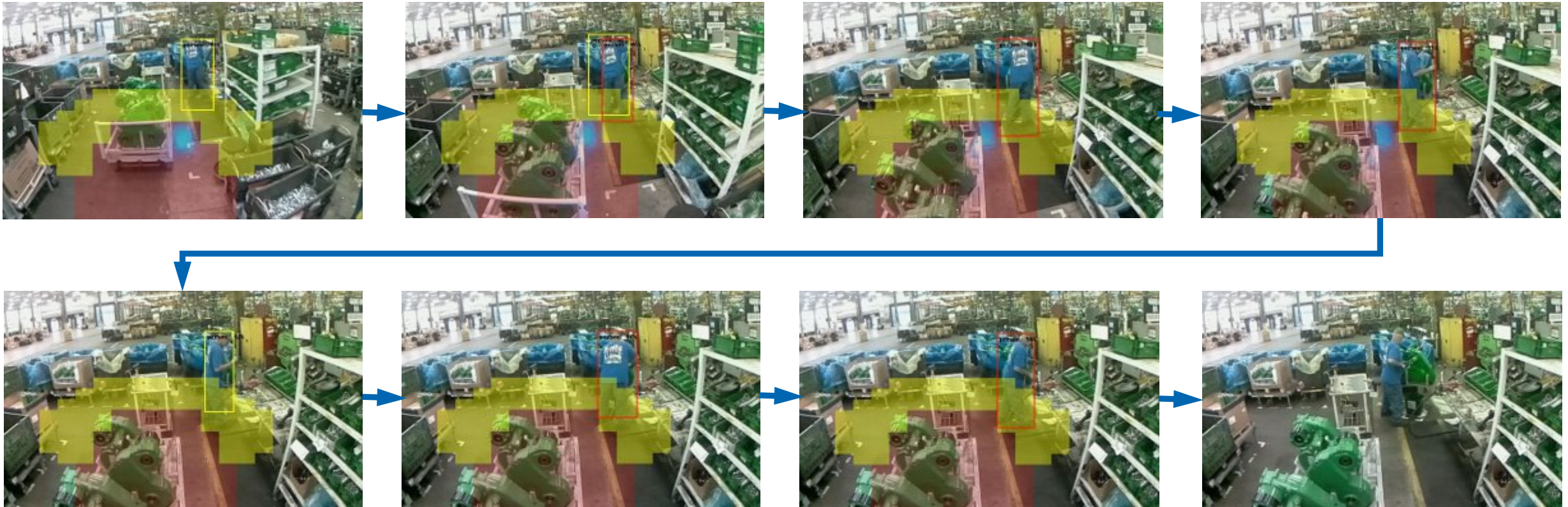
## OmniPro<sup>®</sup> - System Layout

REQUIRED

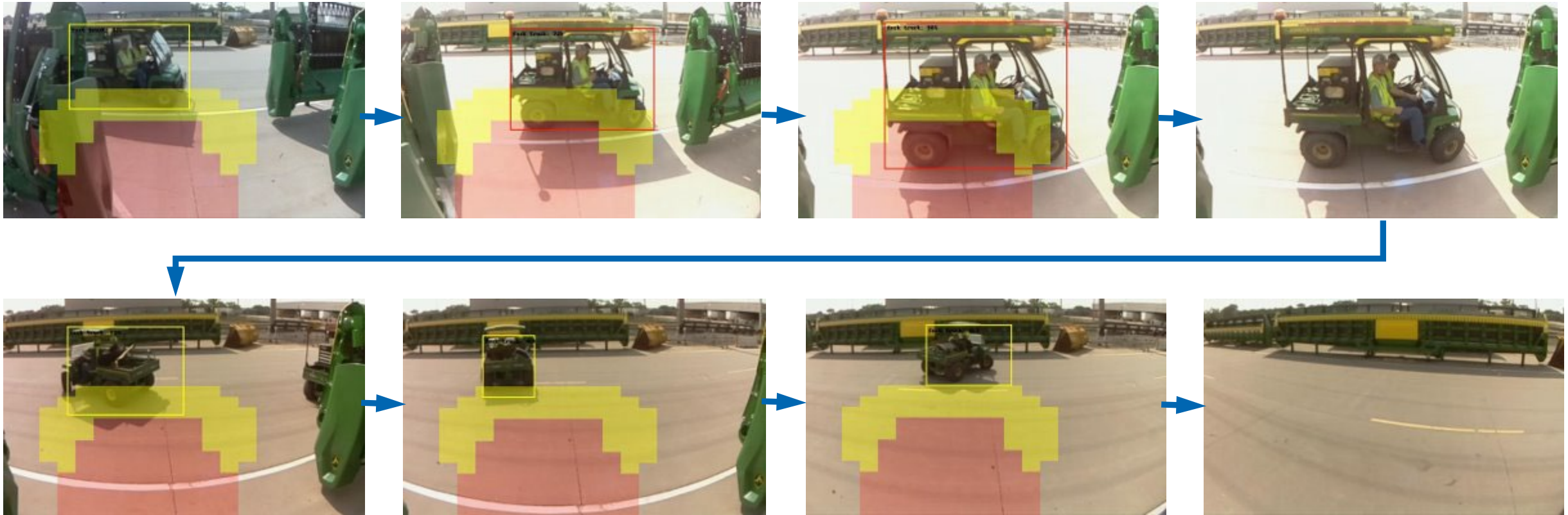
OPTIONAL



## Example of Employee in Work Cell during Load Exchange



## Example of Cross Traffic when Backing Up

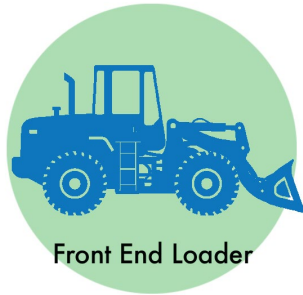




## OmniPro® - Applications



Haul Trucks



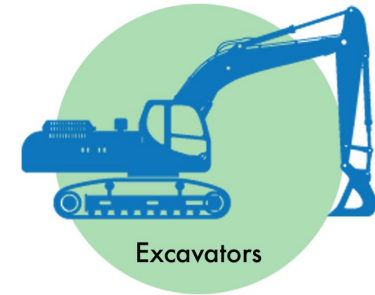
Front End Loader



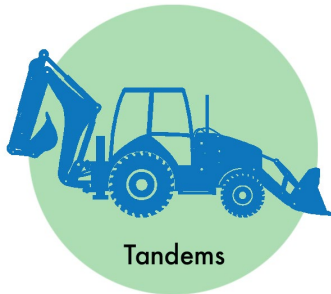
Dump Trucks



Bulldozers



Excavators



Tandems



Forklifts



Skid Steers



Reach Trucks



Heavy-Duty  
Forklifts

# OmniPro®

Innovative technology. Real world application.



## Safety Technology for Surface Mobile Equipment

*Chris Adkins | Mining Sales Manager*

Ph: 304.546.5946

[Chris.Adkins@matrixteam.com](mailto:Chris.Adkins@matrixteam.com) | [MatrixTeam.com](http://MatrixTeam.com)



# Stakeholder Presentation

Wayne Persinger

Alpha Metallurgical Resources





Workman Creek Surface Mine  
Wabtec Collision Awareness  
System (CAS)

MSHA Stakeholder Meeting  
Arlington, Va  
March 11, 2024

# Workman Creek Complex – Mine Facts

Start-Up	2017
Total Employees	315
Annual Production	2.0M Tons
Production Spreads	9
Primary Production Equipment	PC3000 (2), PC2000, EX1900, 993K (3), D11 (8)
Highwall Mining Systems	2 (Superior)
Total Equipment Assets	+260



# Workman Creek Surface Mine Collision Awareness System (CAS)

## **Project Team:**

Marty Price, Anthony Elswick, William Richardson, Andy Asbury, Michael Green, Wayne Persinger, Jeremy Crist, Jimmy Wood

- 2 – CAT 777F Haul Trucks
- 1 – CAT 992G Loader
- 2 – Light Duty Foreman Trucks

**Field Evaluation of 3 different collision awareness systems taking ~1 year, starting Q3 2021 to final decision to purchase**

## **Decision to Purchase October/ November 2022**

### **Selected Wabtec due to:**

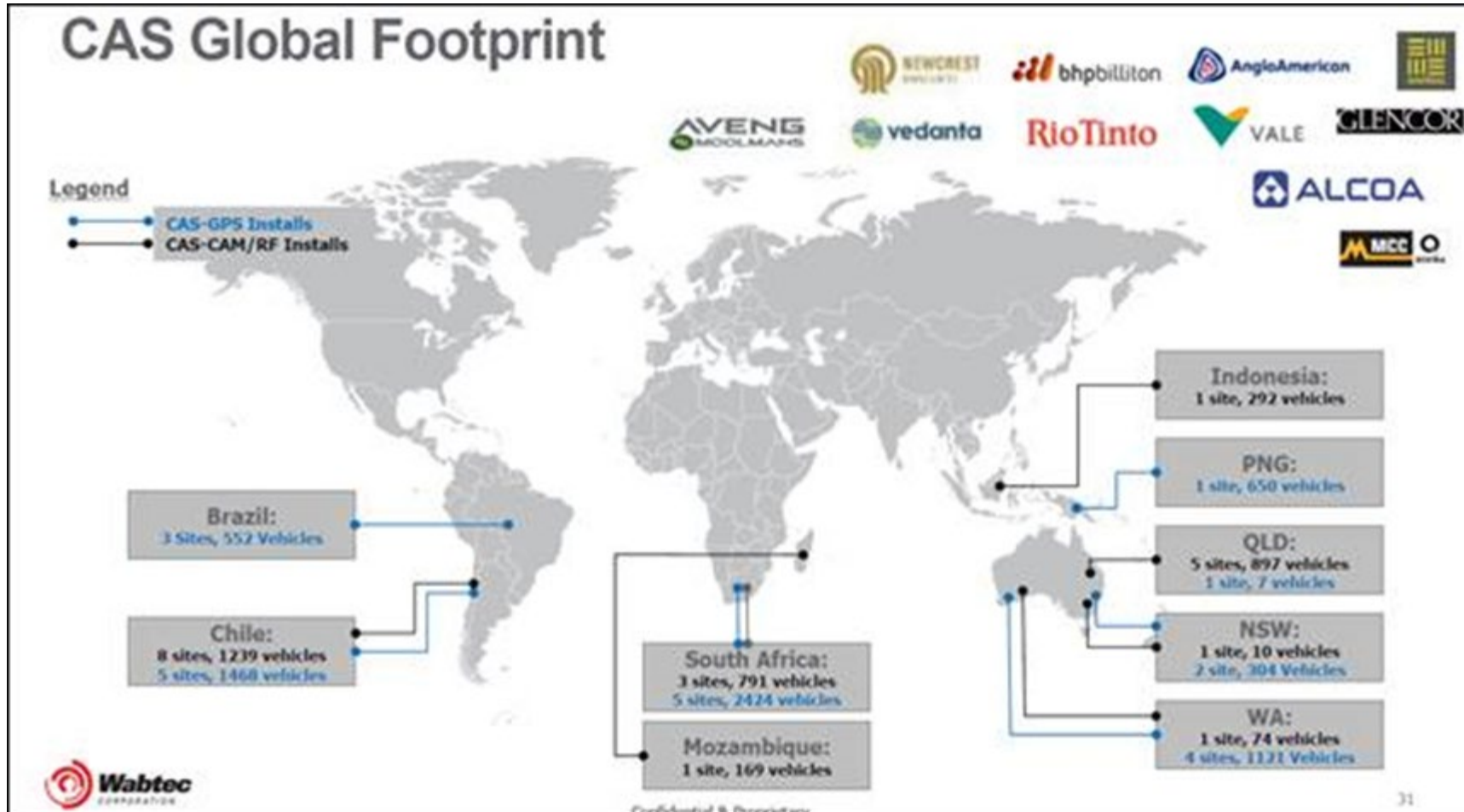
- Self-Testing Capability
- Battery Back-up Feature
- Updated User-Friendly Operator Displays
- Reporting Capabilities
- Overall Accuracy vs. Competitors

## **Installation Start – Q4 2023, Expected Completion Q2 2024**

- 260 surface mine assets



# Wabtec Collision Awareness System (CAS)



Account representative now being established in the U.S. (Atlanta, GA)



# Wabtec Collision Awareness System (CAS)

## The Problem

**Why:** To assist in mitigating significant vehicle interaction risk like this incident



**Consequence:** The result of where the Haul Truck Operator can't see the remote objects due to blind spots

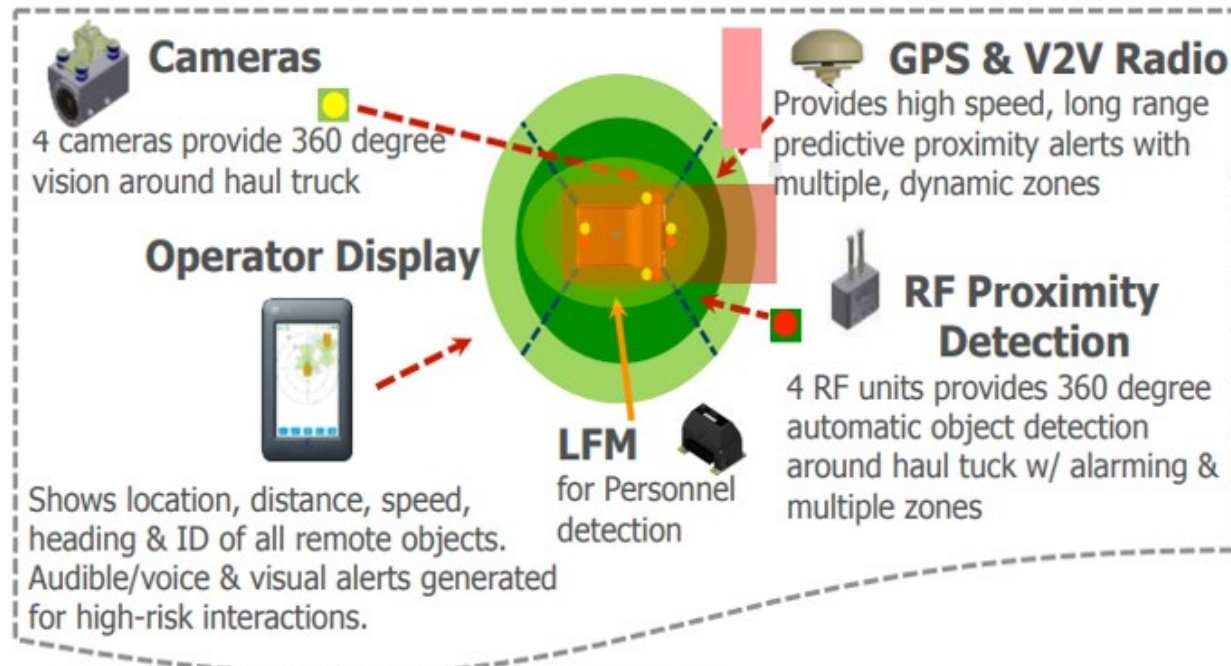




# Wabtec Collision Awareness System (CAS)

## The Wabtec Digital Mine Solution

**How:** Haul Truck fitted with a PDS with graphics display, cameras, GPS/ RF/LFM proximity detection for 360 degree situational awareness. Other vehicles/assets/people also fitted with PDS for 2-way proximity detection.



## Outcomes

- ✓ Managing VI risk
- ✓ Increased Safety
- ✓ Cost Avoidance
- ✓ Supports add on capabilities (integrated safety+productivity)

# Wabtec Collision Awareness System (CAS)

<b>GPS tracking</b> Provides real-time predictive proximity alerts and vehicle tracking via web based reporting. GPS augmented with TOF RF for high integrity tracking.	<b>Back-to-base reporting</b> Provides interaction reports, journey replay, hot-spotting, geofenced exclusion zones/alarm events, safety adherence reports and system health monitoring.	<b>Vehicle display unit</b> Touch screen HMI with graphics display of remote objects showing ID, range, speed and heading with configurable audible and visual alarms.
<b>Protect personnel</b> Personal Tags/Protection Units alert workers in close proximity to heavy mobile equipment, substantially reducing the risk of personal injury.	<b>360° protection</b> Strategically placed proximity units afford operators unparalleled situational awareness—contributing to improved safety levels on-site.	<b>Visual aid</b> Robust wide-view cameras eliminate blind spots with auto switching on direction of travel and to zones of object detection.
<b>Safety adherence technology</b> Monitor and correct unsafe operator practices to improve your mine site's safety culture and compliance.	<b>Highly accurate proximity detection</b> The proximity detection system provides unparalleled accuracy for improved protection and two-way alarming between vehicles, personnel and infrastructure.	<b>Data connectivity</b> Real time data connectivity allows for personnel tracking and messaging, and asset tracking.

# The Wabtec Difference

Primary Development Platform for Mining Safety

Situational Awareness

## Display Information



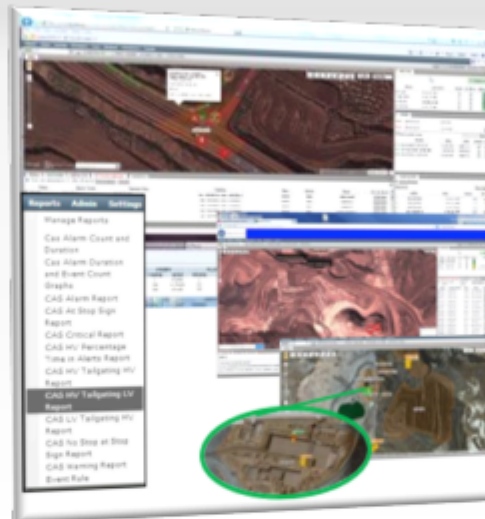
### Graphical display

- Location
- Positive Vehicle ID
- Distance
- Speed
- Heading
- Interaction Alerts
- Self-Test

### Driver Confidence

- Visual display reduces driver nuisance
- Driving decisions can be made to avoid high risk vehicle interactions
- Increased productivity due to higher driver confidence

## Monitoring & Reporting Software



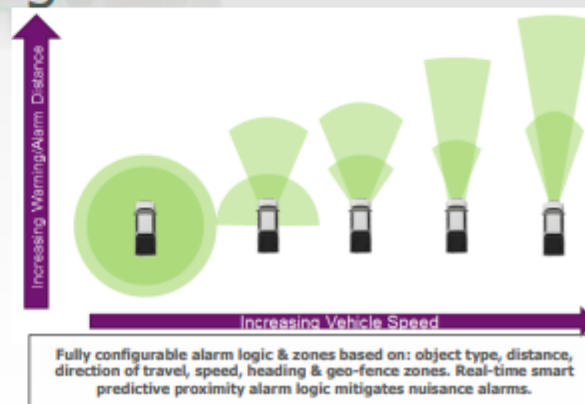
### Dashboarding Capabilities

- Fully configurable
- Compliance & Health Monitoring
- Active Auto Alerting
- Vehicle interaction reports
- Journey Replay
- Hot Spot Maps
- Geo-fencing capabilities
- 3rd Party Reporting

## Programmable Alarm Logic

### Mining Specific Applications

- 14+ Years customization to suit mining
- >370+ Million Hours of CAS operations
  - 10K+ installs, 40 Mines
- Proven algorithms to reduce unnecessary alarms
- Driver confidence when alarming
- Escalating Smart Proximity alerts (L7,L8) & Machine interventions (L9)



# Wabtec Collision Awareness System (CAS)

## Collision Awareness Systems Differentiated Features:



- Speed limit area
- Approaching public road or stop sign
- Trigger boom gate
- Keep out area / no-go zone

### Situational Awareness

- Radar style graphic view of surrounding vehicles / objects showing ID, speed, distance, heading and vehicle / object type
- Intelligent logic with proximity detection beams reduces nuisance alarms.
- Audio, visual and voice alarms allow the operator to comprehend the source of alarms and criticality.
- Ability to advise operator about speed limits, stop signs and special geofence areas.

### Geo-Fence Capabilities

Easily defined and configured rules or actions based on geofence



# Wabtec Collision Awareness System (CAS)

## CAS WEB

### Key Features:

- Web based reporting system using Microsoft SQL server database
- Generate & view interaction reports overlaid on mine site aerial photograph
- Create alerts & geofences (for no-go / exclusion zones)
- Trending analysis – used to analyse operator behaviour



# SAFE PRODUCTION



# Written Safety Program on Surface Mobile Equipment

Office of the Assistant Secretary for Mine Safety and Health

Patricia W. Silvey

Deputy Assistant Secretary for Operations

Mine Safety and Health Enforcement

Brian Goepfert, Administrator

Timothy Watkins, Deputy Administrator



# Surface Mobile Equipment Safety Program

Mine Safety and Health Administration





# Safety Program for Surface Mobile Equipment - Standard

## Compliance Dates

- The final rule became effective on January 19, 2024.
- MSHA will enforce the standard on July 17, 2024.



# Safety Program for Surface Mobile Equipment - Standard

## Purpose

- The purpose of the standard is to promote and support a positive safety culture and improve miners' safety at the mine.

## Scope

- All production operators and part 45 independent contractors must have a written safety program for surface mobile equipment.
- The standard applies to surface mobile equipment at surface areas of underground coal mines and metal and nonmetal mines.



# Safety Program for Surface Mobile Equipment - Standard

## Part 45 Independent Contractors

- Part 45 independent contractors have the same responsibilities as production operators.
- MSHA expects most independent contractors will develop and implement their own safety program or integrate their safety programs into the production operators' safety program.
- MSHA expects production operators and part 45 independent contractors to communicate and coordinate with each other on their respective safety programs.



# Safety Program for Surface Mobile Equipment - Standard

## Surface mobile equipment includes:

- Wheeled, skid-mounted, track-mounted, or rail-mounted equipment capable of moving or being moved, and any powered equipment that transports people, equipment, or materials.
- The rule excludes belt conveyors and any manually powered tools such as wheelbarrows, hand carts, push carts, welding carts, cylinder carts basic hand trucks, or dollies.



# Safety Program for Surface Mobile Equipment - Standard

## Requirements for Written Safety Program

- A written safety program includes actions taken to:
  1. Identify and analyze hazards and reduce the risks related to the movement and operation of surface mobile equipment.
  2. Develop and maintain procedures and schedules for routine maintenance and non-routine repairs for surface mobile equipment;
  3. Identify currently available and newly emerging feasible technologies that can enhance safety at the mine and evaluate whether to adopt them; and
  4. Train miners and other persons at the mine to identify and address or avoid hazards related to surface mobile equipment.
- Production operators and part 45 independent contractors must solicit input from miners and their representative in developing and updating the written safety program.



# Safety Program for Surface Mobile Equipment - Standard

## Requirements for Written Safety Program

- Identify and analyze hazards and reduce the risks related to the movement and operation of surface mobile equipment.

A responsible person must evaluate and update the safety program at least annually or as:

- mining conditions or practices change that may affect miners' safety or health;
- accidents or injuries occur; or as
- surface mobile equipment changes or modifications are made.



# Safety Program for Surface Mobile Equipment - Standard

## Responsible Person

- Production operators and part 45 independent contractors must designate at least one person to evaluate and update the safety program.
- The responsible person must have experience and knowledge about mining conditions and processes necessary to evaluate and update the written safety program.
- Multiple persons can be designated as a responsible person.



# Safety Program for Surface Mobile Equipment - Standard

## Requirements for Written Safety Program

- Develop and maintain procedures and schedules for routine maintenance and non-routine repairs for surface mobile equipment.
  - Procedures and schedules for maintenance and repairs can reflect or reference existing procedures and schedules.





# Safety Program for Surface Mobile Equipment - Standard

## Requirements for Written Safety Program

- Identify currently available and newly emerging feasible technologies that can enhance safety at the mine and evaluate whether to adopt them.
  - Consider feasible technologies that are capable of being used successfully at the mine.
  - Demonstrate compliance by:
    1. attending industry meetings, or NIOSH and/or MSHA meetings that discuss available or newly emerging technologies;
    2. reviewing equipment vendor material; or
    3. attending mine safety and health conferences that include vendor exhibits and equipment demonstrations.



# Safety Program for Surface Mobile Equipment - Standard

## Requirements for Written Safety Program

- Train miners and other persons at the mine to identify and address or avoid hazards related to surface mobile equipment.
  - Safety program training may be integrated into part 46 and part 48 training plans.



# Safety Program for Surface Mobile Equipment - Standard

## Records and Inspection

Production operators and part 45 independent contractors must:

- make the written safety program available for inspection by MSHA, miners, and miners' representatives; and
- provide copies, upon request.



# Safety Program for Surface Mobile Equipment - Standard

## Compliance Assistance

- MSHA will work with industry, labor, and other stakeholders to develop written safety program templates.
- MSHA will also provide the mining community training materials, best practices and guidance, and technical assistance.
- All compliance assistance materials will be posted on MSHA's website.



# Launch: MSHA's Health Locator Tool

Will Drexler, Statistician

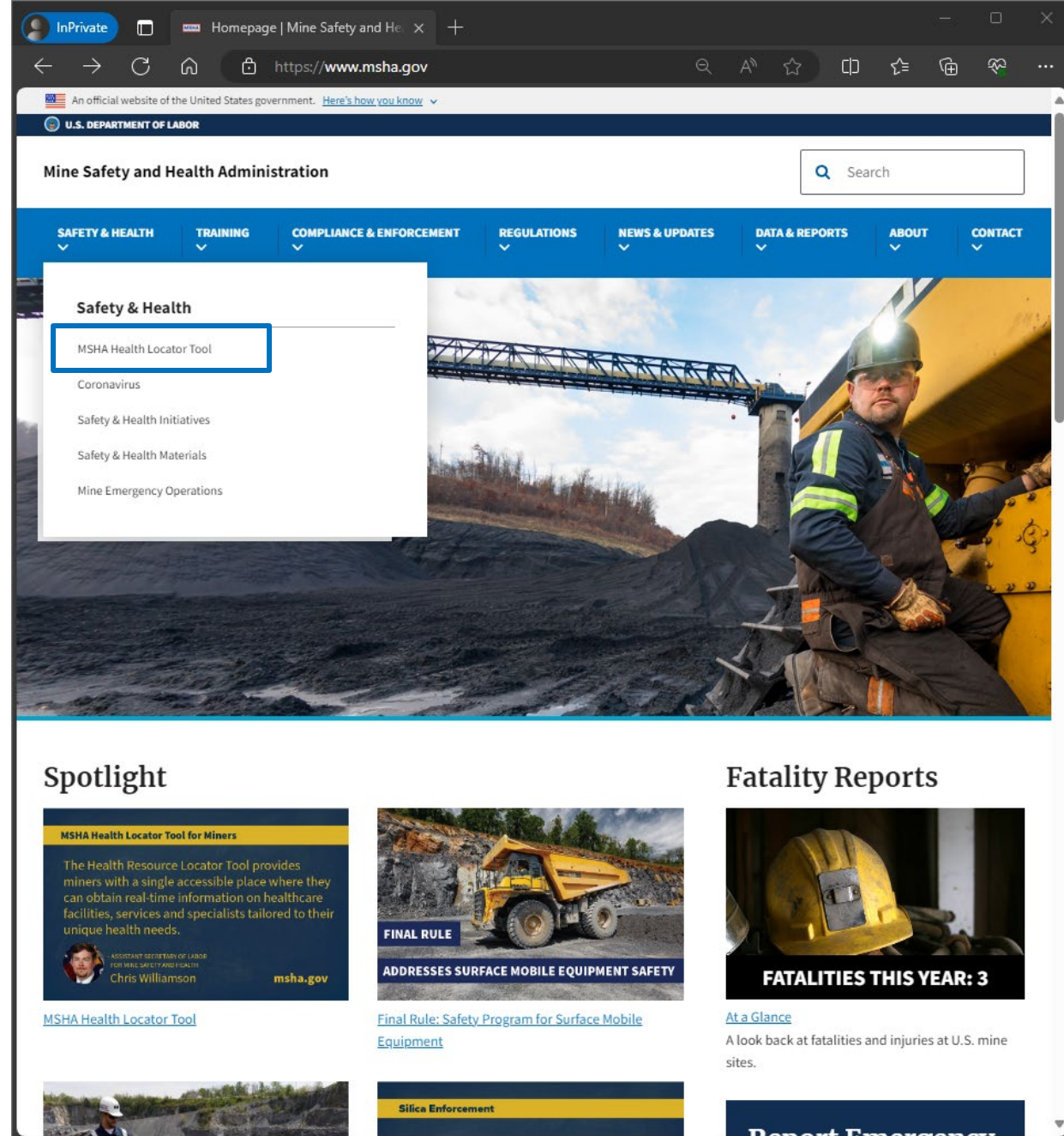


**Mine Safety and Health Administration**  
United States Department of Labor

# Accessing the Tool

1. Open MSHA.gov in a browser of the user's choice.
2. Navigate to the [MSHA Health Resource Locator Tool](#) under the "Safety & Health" dropdown or under the "For Miners" resources.
3. Begin utilizing the tool as desired.

The website does not require users to sign in or share their location, allowing users to anonymously seek health resources.



## Site Introduction:

- Users are immediately greeted with helpful text for using the tool.
- The introduction includes:
  - A brief description
  - Search information
  - List of facility types available
  - Link to data resources

Welcome to the MSHA Health Resource Locator. We developed this tool to address your unique health needs as a miner and connect you with essential healthcare services. You can use this Locator to quickly and easily access a diverse range of health information and care resources such as medical support, specialized services, and helpful information, based on your selected location and search distance.

To begin your search, enter the mine name or ID; or provide your city, state, or ZIP code to find the available health resources within your chosen search area. The resources we list are: NIOSH Certified B-Readers, Black Lung Clinics, Audiologists and Speech-Language Pathologists, VA Healthcare Facilities, Buprenorphine providers, Drug and Alcohol Facilities, Federally Qualified Health Centers, and Mental Health Facilities. Please visit MSHA's [Health Resources](#) page for more information on the Locator's resources.

MSHA is committed to prioritizing miner health. We encourage you to explore the Locator and the options available in your area to help meet your specific needs as a miner.

**Find a Health Resource**

Search by Mine Location <sup>1</sup> or Search by Location

Enter Mine Name or Mine ID (no hyph...)

City, State or ZIP

SEARCH

CLEAR ALL

Resource Type (Optional)

Select one or multiple

Within (Miles)

50 Miles

1. Some mine locations might not include location coordinates so will not be available in the search. In this case, consider

## Find a Health Resource:

1. Tool's Search Bar
2. Filter a search based on 4 criteria:
  - Mine Name/ ID
  - City, State, ZIP
  - Resource Type
  - Search Radius
3. Functionality is very similar to other mapping tools (i.e., Google Maps, Apple Maps, OpenStreetMap)
4. Click the "SEARCH" button to initiate the search

## Find a Health Resource Example:

### 1. Search by Mine Location\*

- Blank

### 2. Search by Location

- “Pikeville, KY”

### 3. Resource Type (Optional)

- Audiologist HRSA Health Centers
- **B Reader (NIOSH Certified)** Mental Health Facility
- **Black Lung Clinic** VA Heath Care Facility
- **Buprenorphine Provider**
- Drug and Alcohol Facilities

### 1. Within (Miles)

- 50 Miles

\*Users can also search by the following features Mine Name/ ID **OR** the City, State, or ZIP Code.

**Find a Health Resource**

Search by Mine Location <sup>1</sup>  **OR** Search by Location  **SEARCH**

Resource Type (Optional)  **Within (Miles)**  **CLEAR ALL**

**David Farler, NP** Distance: 0 Miles  
3495 HWY 15  
Whitesburg, KY 41858  
606-633-4980   
**Buprenorphine Provider**

**Dr. David Wendell Martin, M.D.** Distance: 0.3 Miles  
162 Scott Avenue  
Pikeville, KY 41501  
606-213-6497   
**Buprenorphine Provider**

**Dr. Carl Jeffrey Kinzel, D.O.** Distance: 0.6 Miles  
499 Hambley Boulevard  
Pikeville, KY 41501  
606-437-0097   
**Buprenorphine Provider**

Showing 10 of 100 Results Sort by: Distance (Closest) Export Results





# Thank you!

Do you have any questions?

If you have any questions in the future, feel free to reach out  
to us at

[hughes.xiuxiao.j@dol.gov](mailto:hughes.xiuxiao.j@dol.gov)

[drexler.william.g@dol.gov](mailto:drexler.william.g@dol.gov)

Site link: [Health Resource Locator | Mine Safety and Health Administration \(MSHA\)](#)

# General Q&A

