



## MINE SEARCH AND RESCUE TEAM

<b>DESCRIPTION</b>	A Mine Search and Rescue (SAR) Team conducts search, rescue, and recovery in underground mine environments, including active, inactive, and abandoned mines.
<b>RESOURCE CATEGORY</b>	Search and Rescue
<b>RESOURCE KIND</b>	Team
<b>OVERALL FUNCTION</b>	<p>The Mine SAR Team:</p> <ol style="list-style-type: none"> <li>1. Conducts search, rescue, and recovery in active and inactive mines environments, as defined by the U.S. Department of Labor’s Mine Safety and Health Administration (MSHA)</li> <li>2. Provides for primary rescue of humans and animals to the nearest location for secondary air or land transport, care, and sheltering</li> <li>3. Provides first aid to include cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED)</li> <li>4. Operates within the Incident Command System (ICS)</li> <li>5. Performs ventilation operations</li> <li>6. Conducts technical rope rescue operations</li> <li>7. Performs small fire extinguishment operations</li> <li>8. Uses ground vehicles, watercraft, and aircraft for support</li> <li>9. Operates in environments with and without infrastructure, including those with compromised access to roadways, utilities, and transportation, or medical facilities; and those with limited availability of shelter, food, and water</li> </ol>
<b>COMPOSITION AND ORDERING SPECIFICATIONS</b>	<ol style="list-style-type: none"> <li>1. Discuss the following items prior to deployment:             <ol style="list-style-type: none"> <li>a. Intra-team communications, such as programmable inter-operable communications with Command, General Staff, and other supporting resources</li> <li>b. Presence of contaminated environments and need for related personal protective equipment (PPE), respiratory protection, clothing, and equipment</li> <li>c. Security and force protection needed upon arrival</li> <li>d. Logistics support, such as length of deployment, lodging, transportation, and meals</li> </ol> </li> <li>2. The requestor should specify additional specialized equipment, such as hardware, software, ropes, survivor evacuation devices</li> <li>3. The requestor should specify the mission location and operational environment, such as land, wilderness, or hazardous materials contamination</li> <li>4. The requestor should specify additional skills needed for deep or rapidly moving water, sumps, or completely water-filled passages</li> <li>5. The requestor should specify the type of animal rescue, such as livestock and equine, companion, avian, non-domestic and exotic animals</li> <li>6. The requestor should acquire additional specialized personnel separately, such as advanced medical, Emergency Medical Technician (EMT), paramedic, and canine SAR specialist</li> <li>7. The requestor should acquire secondary land or air transport of rescues separately</li> <li>8. The requestor should specify or separately acquire additional vehicles, trailers, equipment, or supplies such as fuel</li> <li>9. The requestor should consider the need for additional capabilities or endorsements to address hazards the team may encounter during operations in SAR environments, which may be immediately dangerous to life and health (IDLH), as defined by ASTM International (ASTM) F2890 Standard Guide for Hazard Awareness for Search and Rescue Personnel</li> </ol>

Each type of resource builds on the qualifications of the type below it. For example, Type 1 qualifications include the qualifications in Type 2, plus an increase in capability. Type 1 is the highest qualification level.

COMPONENT	TYPE 1	TYPE 2	NOTES
<b>MINIMUM PERSONNEL PER TEAM</b>	7	7	Not Specified



Resource Typing Definition for Mass Search and Rescue Operations  
Search and Rescue

COMPONENT	TYPE 1	TYPE 2	NOTES
<b>MANAGEMENT AND OVERSIGHT PERSONNEL PER TEAM</b>	1 - NIMS Type 1 Mine SAR Team Leader	1 - National Incident Management System (NIMS) Type 2 Mine SAR Team Leader	Not Specified
<b>SUPPORT PERSONNEL PER TEAM</b>	6 - NIMS Type 1 Mine SAR Technician	6 - NIMS Type 2 Mine SAR Technician	Rapid intervention and logistical support, such as surface operations and communications, may require additional teams.
<b>OPERATIONS CAPABILITY PER TEAM</b>	Same as Type 2, PLUS: 1. Conducts search, rescue, and recovery in active underground mine environments 2. Firefighting and explosion operations 3. Bulkhead building and timbering operations 4. Post fire/explosion operations	Conducts search, rescue, and recovery in inactive underground mine environments	1. All teams are capable of working in or around a mine with a NIMS Type 1 Canine Search Team - Land Live 2. The MSHA defines endorsements necessary for specific mine types.
<b>PERSONAL PROTECTIVE EQUIPMENT (PPE) EQUIPMENT PER TEAM MEMBER</b>	Same as Type 2	Minimum PPE consistent with this resource's capabilities and needs, including: 1. Head protection compatible with cap lamps 2. Gloves 3. Flame protective outerwear 4. Footwear appropriate to the environment	1. American National Standard Institute (ANSI) Z359: Fall Protection Code addresses PPE. 2. Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.146: Permit-Required Confined Spaces addresses confined spaces.
<b>TRANSPORTATION EQUIPMENT PER TEAM</b>	Same as Type 2	2 - Vehicle	Vehicles are for transporting team members and equipment and should be 4 wheel drive as the environment requires.



Resource Typing Definition for Mass Search and Rescue Operations  
Search and Rescue

COMPONENT	TYPE 1	TYPE 2	NOTES
<b>GENERAL EQUIPMENT PER TEAM MEMBER</b>	Same as Type 2, PLUS: Equipment including: 1. Entry equipment 2. Fire/explosion suppression 3. Bulkhead building and timbering	1. Technical rope rescue equipment 2. Atmospheric monitors for each type of gas expected and any necessary equipment for testing and sustaining operations 3. Particulate masks and respirators 4. Lockout and tag-out kits 5. Personnel accountability system for surface and entry 6. Rapid intervention crew kit 7. Small fire extinguishment 8. Specialized equipment as needed, such as animal rescue, water entry equipment 9. Access, search, rescue, recovery 10. Patient assessment, treatment and evacuation 11. Ground support for air operations 12. Base and spike camp 13. Entry and escape combination or separate breathing apparatuses: a. Breathing apparatus (BA) with at least 4 hour capacity b. Any necessary equipment for testing and sustaining such BA for 8 hours while using it c. Escape breathing device with at least 1 hour capacity	Not Specified
<b>COMMUNICATIONS EQUIPMENT PER TEAM MEMBER</b>	Not Applicable	1. Intra-team portable communications 2. Portable radios with ground to air capability 3. Handheld Global Positioning System (GPS) units 4. Mobile phone and waterproof bag 5. Entry to Surface and Surface to Entry Communications that comply with OSHA 29 CFR 1910.146 6. Handi-mikes or ear/headsets	1. Intra-team and inter-team communications should be consistent with National Interoperability Field Operations Guide (NIFOG). 2. Consider alternate forms of communication, such as satellite phones, based on the mission assignment and team needs.



## NOTES

Nationally typed resources represent the minimum criteria for the associated component and capability.

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## REFERENCES

1. FEMA, NIMS 509: Mine Search and Rescue Team Leader
2. FEMA, NIMS 509: Mine Search and Rescue Technician
3. FEMA, NIMS 509: Canine Search Team – Land Live
4. FEMA, National Incident Management System (NIMS), October 2017
5. The American Society of Safety Engineers (ASSE), ANSI/ASSE A10.32: Fall Protection Systems for Construction and Demolition Operations, 2012
6. ASSE, ANSI/ASSE A10.16: Safety Requirements for Tunnels, Shafts, and Caissons, 2009
7. ASSE, ANSI/ASSE Z359.1: Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components, 2007
8. ASTM International (ASTM) F2890-12: Standard Guide for Hazard Awareness for Search and Rescue Personnel, 2012
9. U.S. Department of Homeland Security, Office of Emergency Communications (OEC), National Interoperability Field Guide (NIFOG), version 1.5, January 2014
10. Occupational Safety and Health Administration (OSHA), 29 Code of Federal Regulations (CFR) Part 1910.146: Permit-Required Confined Spaces