

SAFETY AND HEALTH AUDIT FOR AGGREGATE OPERATORS SURFACE METAL/NONMETAL

Any effective safety plan has to include a method for checking safety and health precautions and compliance on a systematic basis. Audits are one way for accomplishing this goal. A good audit will establish a baseline from which you can begin to evaluate your operation and make changes to improve safety and health. Attached is an example of a safety audit for you to use to check safety and health conditions at your operation.

This safety audit is focused on the most common violations found at aggregate operations. Twenty condition/practices accounted for a majority of all violations cited at Sand and Gravel and Crushed Stone Mining Operations in 2008. Completing this self-audit package is an important part of a safety program, which will help you identify and correct unsafe conditions/practices at your mining operation. The 20 most frequently cited standards are listed on the charts on the next pages. These charts are broken down into the 20 most frequently cited standards for sand and gravel, surface stone and stone mill operations.

Remember this is a focused audit that only lists the most common violations occurring at aggregate operations.

**Suggested Crew Safety Projects – Safety Tasks
To Help Prevent Accidents and Promote MSHA Compliance**

What	Scheduled	Done
Use IG-14 Self Audit (in SMO binder) – “in-house” self inspection of pit, plant, equip.		
Use “Most Frequently Written Citations” (MSHA web site) to self-audit pit/plant/equip. and train the crew		
Review the Legal ID for changes that require update to MSHA		
Review the Part 46 Training Plan for accuracy		
Verify mobile equipment ROPS tag is attached to all ROPS		
Check the labeling on all electrical switchgear, start/stop stations, panels, disconnects		
Check electrical conductors, insulation, fittings, inspection and cover plates, plugs, guarding around lights		
Inspect all corded tools and extension cords - insulation/fitting/cord/plug/polarity		
Insure all containers and tanks are labeled so content is identified		
Verify the HazCom List of Materials is accurate and MSDS are available		
Check stretcher, blanket and contents of first aid kit		
Review content and organization of MSHA Records/Files		
Review submitted 7000-1 Injury and Illness Reports for accuracy and completion		
Identify your “weakest” guard and put it on your work plan to make continuous improvements		
Inspect walkways, decks, platforms, handrails, toeboards, ladders - safe access, housekeeping, lighting		
Inspect berms and guardrails		
Check warning signage – pit area, flammable/combustible storage areas, elect. Installations, overhead hazard areas		
Verify that emergency phone numbers are posted		
Crew meeting – how will we respond to emergency events, who will do what, who will be called, where is emergency response equipment?		
Develop a checklist of compliance items that need to be completed or verified before maintenance shutdowns or seasonal startup		
Inspect rigging – straps/slings/chains/come-alongs/chain falls		
Inspect fall protection harnesses/lanyards. Hold a review training session on fall protection equipment. Where do we need to add attachment points?		
Inspect gas welding equipment – carts, hoses, regulators, cylinders capped and secured		
Inspect gas cylinder storage areas		
Inspect welder – leads/stinger/gr. clamp		
Inspect mechanical and hydraulic lifting jacks		
Inspect jack stands/transmission jacks		
Inspect chock and cribbing material		
Inspect guarded areas below conveyor belt counterweights		
Inspect scaffolding materials		
Inspect ladders/stools/portable steps		
Insure that the system for parking unattended equipment is in compliance with 56.14207		

**SAFETY AND HEALTH AUDIT FOR AGGREGATE OPERATORS SURFACE
METAL/NONMETAL**

**SAND AND GRAVEL 01/01/2008 – 12/31/2008
(20 MOST FREQUENTLY CITED STANDARDS)**

Rank	Standard Title	Standard
1	Guarding of Moving Machine Parts	56.14107
2	Electrical Conductors	56.12004
3	Mobile Equipment Safety Defects	56.14100(b)
4	Horns and Backup Alarms	56.114132(a)
5	Guard Construction	56.14112(b)
6	Insulation and Fittings for Power Wires and Cables	56.12008
7	Berms or Guardrails	56.9300(a)
8	Parking Brakes	56.14101(a)(2)
9	Inspection and Cover Plates	56.12032
10	Preparation and submission of Quarterly Report	50.30(a)
11	Safe Access	56.11001
12	Testing Grounding Systems	56.12028
13	Housekeeping	56.20003(a)
14	Warning Signs	56.4101
15	Fire Equipment Inspection	56.4201(a)(2)
16	Handrails and Toe Boards	56.11002
17	Commencement of operations and Closing of Mines	56.1000
18	Construction and maintenance of Guards	56.14112(a)(1)
19	Protection for openings around travelways	56.11012
20	Correction of Dangerous Conditions	56.12030

**SAFETY AND HEALTH AUDIT FOR AGGREGATE OPERATORS SURFACE
METAL/NONMETAL**

**SURFACE STONE 01/01/2008 – 12/31/2008
(20 MOST FREQUENTLY CITED STANDARDS)**

Rank	Standard Title	Standard
1	Guarding of Moving Machine Parts	56.14107(a)
2	Mobile Equipment Safety Defects	56.14100(b)
3	Horns and Backup Alarms	56.14132(a)
4	Electrical Conductors	56.12004
5	Guard Construction	56.14112(b)
6	Housekeeping	56.20003(a)
7	Inspection and Cover Plates	56.12032
8	Insulation and Fittings for Power Wires and Cables	56.12008
9	Parking Brakes	56.14101(a)(2)
10	Safe Access	56.11001
11	Preparation and Submission of MSHA Report Form 7000 – 2 Quarterly Employment and Coal Production Report	50.30(a)
12	Berms or Guardrails	56.9300(a)
13	Testing Grounding Systems	56.12028
14	Correction of Dangerous Conditions	56.12030
15	Warning Signs	56.4101
16	Handrails and Toe Boards	56.11002
17	Identification of power switches	56.12018
18	Guard Construction	56.14112(a)(1)
19	Requirement for container labeling	47.41(a)
20	Grounding Circuit Enclosures	56.12025

DIRECTIONS FOR USING THE SELF AUDIT

This safety audit consists of descriptions of safety and health standards for aggregated operations. The first column consists of the description of the regulation with questions (second column) that correspond to that regulation. In some cases only one question may be necessary, in others several questions may be necessary for the description.

Responses should fall into three categories, (YES) (NO) and (N/A). If you answer (YES) generally no further action is necessary.

A (NO) response generally will require further action and an explanation of the defective condition/location/practice. If you answer (NO) to any question, further action will be necessary and you should complete the column (Corrective Action) and indicate action taken or flag this area for corrective action. In order to make this audit a positive vehicle for improving safety at your mining operation, any (NO) answer should include a corrective date entry (the last column on the audit).

Check (N/A) if the description is not applicable to your operation.

DESCRIPTION	Y E S	N O	N / A	CORRECTIVE ACTION NEEDED	STANDARD	DATE RESOLVED
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HAZARD COMMUNICATION (HAZCOM)

Requirement for container labels	The operator must ensure that each container of a hazardous chemical has a label. If a container is tagged or marked with the appropriate information, it is labeled.				47.41(a)	
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REPORTING OF ACCIDENTS, INJURIES, AND ILLNESSES

Preparation and Submission of MSHA Report Form 7000-1	Is Form 7000-1 (Mine Accident, Injury, and Illness Report) completed and submitted to MSHA within ten working days after an accident or occupational injury occurs or an occupational illness is diagnosed?				50.20	
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QUARTERLY EMPLOYMENT AND COAL PRODUCTION REPORT

Preparation and Submission of MSHA Form 7000-2	Is Form 7000-2 (Quarterly Employment and Coal Production Report) completed and submitted to the Office of Injury and Employment Information in Denver, Colorado within 15 days after the end of each quarter?				50.30(a)	
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PROCEDURES

Notification of Commencement of Operations and Closing of Mines	Is MSHA and Metal/Nonmetal Mine Safety and Health District office notified before starting operations?				56.1000	
	Is MSHA and Metal/Nonmetal Mine Safety and Health District office notified when a mine is closed?					

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PROHIBITIONS/PRECAUTIONS/HOUSEKEEPING

Warning Signs	Are readily visible signs prohibiting smoking and open flames posted where a fire or explosion hazard exists?					56.4101	
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SAFETY DEVICES, PROVISIONS, AND PROCEDURES FOR ROADWAYS, RAILROADS, LOADING, AND DUMPING SITES

Berms or Guardrails	Are adequate berms or guardrails provided and maintained on the outer banks of elevated roadways?					56.9300(a)	
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TRAVELWAYS

Safe Access	Is safe means of access provided and maintained to all working places (includes access to service equipment)?					56.11001	
Protection for openings around travelways	Openings above, below, or near travelways through which persons or materials may fall shall be protected by railings, barriers, or covers. Where it is impractical to install such protective devices, adequate warning signals shall be installed.					56.11012	
Handrails and Toe Boards	Are substantially constructed handrails provided and maintained on crossovers, elevated walkways, elevated ramps, and stairways?					56.11002	
	Are toe boards provided where necessary?						

DESCRIPTION	Y E S	N O	N / A	CORRECTIVE ACTION NEEDED	STANDARD	DATE RESOLVED
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ELECTRICITY							
Electrical Conductors	Are electrical conductors (power cables) protected from mechanical damage?					56.12004	
	Are the electrical conductors sufficient in size and current carrying capacity to prevent overheating or damage to the insulating cover?						
Insulation and Fittings for Power Wires and Cable Entrance	Are the power wires and cables adequately insulated where they pass into or out of electrical compartments?					56.12008	
	Are cables entering metal frames of motors, splice boxes, and electrical compartments, through proper fittings and bushings?						
Identification of power switches	Principal power switches shall be labeled to show which units they control, unless identification can be made readily by location					56.12018	
Circuit Enclosure Grounding	Are all metal enclosing or metal encased electrical circuits grounded or provided with equivalent protection?					56.12025	
Testing Grounding Systems	Are grounding systems tested immediately after installation, repair, or modification, and annually thereafter?					56.12028	
	Is a record of the most recent test available for inspection?						
Correction of Dangerous Conditions	Are potentially dangerous electrical conditions corrected before the equipment or wiring is energized?					56.12030	
Inspection and Cover Plates	Are inspection and cover plates on electrical equipment and junction boxes?					56.12032	
Guarding Around Lights	Are guards used where portable extension lights and other lights that by their location, present a shock or burn hazard?					56.12034	

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MACHINERY AND EQUIPMENT

Safety Defects, Examination, Correction, and Records	Are defects that affect safety corrected in a timely manner?					56.14100(b)	
Brakes	Is self propelled mobile equipment equipped with a service brake system capable of stopping and holding the equipment with its typical load on the maximum grade it travels? (Does not apply to rail equipment)					56.14101(a) (2)	
	Are parking brakes capable of holding self propelled mobile equipment with its typical load on the maximum grade?						
	Are all braking systems on self propelled mobile equipment installed and maintained in functional condition?						
Moving Machine Parts	Are adequate guards provided to protect persons from contacting gears, sprockets, chains, drive, head, tail, and take up pulleys, flywheels, couplings, shafts, fan blades, and similar moving parts that can cause injury?					56.14107 56.14107(a)	
Construction and Maintenance of Guards	Are guards securely in place when equipment is operating?					56.14112(a) (1) (2), and (b)	
	Are guards constructed to withstand vibration, shock, and wear to which they will be subjected to during normal operation?						
Horns and Backup Alarms	Are manually operated horns or other audible warning devices provided on self propelled mobile equipment?					56.14132 56.14132(a)	
	Does self propelled mobile equipment have automatic reverse activated signal alarm?						

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COMPRESSED AIR AND BOILERS

High Pressure Hose Connections	Are safety chains or other suitable locking devices used at connections to machines of high pressure hose lines of 3/4" inside diameter or larger where a connection failure would create a hazard?					56.13021	
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PERSONAL PROTECTION

Safety Belts and Lines	Do persons wear safety belts and lines where there is a danger of falling?					56.15005	
	Are approved safety belts and safety lines readily available?						
	Does a second person tend a lifeline when bins, tank, or other dangerous areas are entered?						

MATERIAL STORAGE AND HANDLING

Securing Gas Cylinders	Are compressed and liquid gas cylinders secured in a safe manner?					56.16005	
Protection of Gas Cylinder Valves	Are valves on compressed gas cylinders protected by covers when being transported or stored?					56.16006	
	Are cylinders placed in a safe location when in use?						
Examination of Working Places (Workplace Safety Record)	A record that such examinations were conducted shall be kept by the operator for a period of one year, and shall be made available for review by the Secretary or his authorized representative					56.18002(b)	

ILLUMINATION

Illumination of surface working areas.	Is illumination sufficient to provide safe working conditions in and on all surface structures, paths, walkways, stairways, switch panels, loading and dumping sites, and work areas?					56.17001	
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SAFETY PROGRAMS

First Aid	Is an individual capable of providing first aid available on all shifts?												56.18010		
	Is first aid training made available to all interested miners?														
Housekeeping	Are workplaces, passageways, storerooms, and service rooms kept clean and orderly?												56.20003(a)		
	Are floors of every workplace maintained in a clean and dry condition?												56.20003(b)		
	Is every floor, working place, and passageway kept free from protruding nails, splinters, holes, or loose boards?														

FIREFIGHTING EQUIPMENT

Inspection	Firefighting equipment shall be inspected according to the following schedules:														
	At least once every twelve months, maintenance checks shall be made of mechanical parts, the amount and condition of extinguishing agent and expellant, and the condition of the hose, nozzle, and vessel to determine that the fire extinguishers will operate effectively.												56.4201(a) (2)		
	At least once every twelve months, maintenance checks shall be made of mechanical parts, the amount and condition of extinguishing agent and expellant, and the condition of the hose, nozzle, and vessel to determine that the fire extinguishers will operate effectively.														

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AIR QUALITY AND PHYSICAL AGENTS

Exposure limits for airborne contaminants	Except as provided in paragraph (b) of this section, the exposure to airborne contaminants shall not exceed, on the basis of a time weighted average, the threshold limit values adopted by the American Conference of Governmental Industrial Hygienists, as set forth and explained in the 1973 edition of the Conference's publication, entitled "TLV's Threshold Limit Values for Chemical Substances in Workroom Air Adopted by ACGIH for 1973," pages 1 through 54, which are hereby incorporated by reference and made a part hereof. This publication may be obtained from the American Conference of Governmental industrial Hygienists by writing to the Secretary-Treasurer, P.O Box 1937, Cincinnati, Ohio 45201, or may be examined in any Metal and Nonmetal Mine Safety and Health District Office of the Mine Safety and Health Administration. Excursions above the listed thresholds shall not be of a greater magnitude than is characterized as permissible by the Conference					56.5001(a)/ 56.5005	
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OCCUPATIONAL NOISE EXPOSURE

Action Level	If during any work shift a miner's noise exposure equals or exceeds the action level, is the miner enrolled in a hearing conservation program?					62.120	
Permissible Exposure Level	If during any work shift a miner's noise exposure exceeds the permissible exposure level, are all feasible engineering and administrative controls to reduce the noise exposure used?					62.130(a)	