

Company Name:	Equipment/Job Identification: Surface Mechanic Type of Equipment: Make: Model: Year: Use:
Mine Name:	
Date of Analysis:	

Pre-Assessment:

List pre-requisites here:

- HazCom Training,
- Hand tool Training
- Part 48 Training
- Basic Hydraulic Training
- Handling Material Training (Proper lifting)
- Personal Protective Equipment Training
- Prevention of slips and falls

Duty 1: Start-of-shift Activities

Learner will explain the importance of start-of-shift activities. The learner will explain each job step, why it is conducted, any associated risk, and how to implement appropriate controls. Start-of-shift activities include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Attend Pre-shift meeting	To receive the correct information on work assignments			
<ul style="list-style-type: none"> • Discuss equipment down • Obtain copy of down sheet 				Be sure the trainee gets the appropriate information at the beginning of the shift
<ul style="list-style-type: none"> • Obtain assignments • Check trucks • Check dozers • Check shovels 				Teams of two, if possible

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
• Check graders				
• Check loaders				
Self assessment	Ensure fitness for work: mental, physical, attitude, etc. for safety of self & others			

Duty 2: Examine equipment for preventive maintenance

Learner will demonstrate how to safely and thoroughly examine equipment for preventive maintenance. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. A safe and thorough equipment examination for preventive maintenance includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Examine Shovel				
Conduct visual inspection of the following:				Maintain communication with equipment operator For the 1800, inspect front-to-back instead of side-to-side
• Ladders	Cause serious personal injury, slips and falls are the number three causes of fatalities in the mining industry			When you drive up to the shovel these are the first things you would observe
• Handrails	Cause serious personal injury, slips and falls are the number three causes of fatalities in the mining industry			
• Bucket	Damaged bucket could be very costly and could cause additional damage to machine			
• Grease lines	Insufficient lubrication could cause costly repairs			
• Start at left side of shovel				

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
○ Inspect pump room				
▪ Check for: bad hoses & leaks				
▪ Check mainframe for cracks	Early detection is critical to avoid future failure			
▪ Inspect engine for: leaks, hoses, belts, and guarding	Critical to prevent engine failure and major down time			
● Cross top of machine				
○ Inspect fire suppression canisters	To ensure fire protection			
○ Inspect Sheet metal for debris & build-up across top of machine				
○ Inspect Air intake hoses for engine	Critical to prevent engine failure and major down time			
○ Inspect Handrails	Cause serious personal injury, slips and falls are the number three causes of fatalities in the mining industry			
○ Examine air compressor for the following: oil leaks, guards, pressure gauge, pressure relief valve, and drain plugs	May cause hydraulic failure and/or personal injury			
○ Open cab door				
▪ Inspect the instrument panels for warning lights	Gives early indication of failures			
● Cross down to right side				
○ Inspect Engine for leaks, hoses, belts, and guarding	Critical to prevent engine failure and major down time			
○ Inspect Pump room for: bad hoses & leaks				

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> Report problems for Possible hold over 	Helps make an informed decision.			Common problems include: Broken grease lines, hydraulic and engine leaks, missing tooth tip, missing bucket guard, damage to sheet metal and handrails
Examine Trucks				Ensure all trucks are in the ditch and operators exited cab before examination All maintenance employees must be out ditch by 15 minutes prior to start of shift
Inspect visually the left side of truck engine for the following:				
<ul style="list-style-type: none"> Inspect intake air boots 	Critical to prevent engine failure and major down time			
<ul style="list-style-type: none"> Inspect the Fan, alternator, AC belts and guards 	Possible engine failure and down time. Personal injury.			Guards secured/bolts intact
<ul style="list-style-type: none"> Inspect fuel filter and fuel lines for leaks. 				
<ul style="list-style-type: none"> Inspect Steering hoses 	Loss of operator control, property damage and personal injury/death			
<ul style="list-style-type: none"> Inspect Radiator hoses 	Could lose an engine, down time			
<ul style="list-style-type: none"> Check clamps 				
<ul style="list-style-type: none"> Inspect wheel for the following: <ul style="list-style-type: none"> Inspect seals 	Equipment damage, down time, possible personal injury			Oil in wheel, look for oil starting to pour. Contact supervisor if conditions are found.
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Inspect brake pad 	Equipment damage, down time, possible personal injury			cracks in discs, wear
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Check for missing or loose lug nuts and wedges 	Equipment damage, down time, possible personal injury			Check for spun (shiny metal)
<ul style="list-style-type: none"> <ul style="list-style-type: none"> Inspect the Tire for: <ul style="list-style-type: none"> Check for inflation/bulging 	High cost, damage, replacement availability			A low tire will bulge on the bottom

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> ▪ Check for Damage which includes the following: <ul style="list-style-type: none"> • Cuts • Sidewall cuts 				
<ul style="list-style-type: none"> o Inspect Rim 	Possible failure or safety issue			Check for cracks, bending
<ul style="list-style-type: none"> o Inspect Rings (bead & lock) 	Possible failure or safety issue			
<ul style="list-style-type: none"> o Inspect Front trailing arm for cracks 	could cause property damage and personal injury			Lock and tag out of service and Notify supervisor immediately
<ul style="list-style-type: none"> o Inspect Tie rod end 	Could lose control of truck; could cause multiple serious injuries and property damage			Show trainee a loose tie rod for reference
<ul style="list-style-type: none"> o Inspect Struts <ul style="list-style-type: none"> ▪ Check for Leaks in cylinders ▪ Check for broken bearings 				Oil leaks indicates damage
<ul style="list-style-type: none"> o Examine Steering cylinders <ul style="list-style-type: none"> ▪ Check pins/bearings ▪ Check for oil leaks 				
Underneath - Middle of truck				
<ul style="list-style-type: none"> • Check Drive shaft for U-Joints, Caps, & Damage 				
<ul style="list-style-type: none"> • Examine Truck body/frame & cracks 	Early detection is important to prevent down time and high costs			Notify supervisor immediately
<ul style="list-style-type: none"> o Examine for Hydraulic leaks 				Look for Hoses rubbing against each other or metal
<ul style="list-style-type: none"> o Inspect transmission visually for leaks and loose bolts 				
<ul style="list-style-type: none"> o Examine Wish Bone bearing 				Look for bearing broken or bolts missing

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Rear of truck				
<ul style="list-style-type: none"> • Inspect Strut for the following: <ul style="list-style-type: none"> ○ Check Pins coming out ○ Check for Bearings and leaks 	Could cause the truck to roll over causing major property damage and possible serious injury			Lock and tag out of service; immediately contact supervisor
<ul style="list-style-type: none"> • Examine Bed pins 	Could cause the truck to roll over causing major property damage and possible serious injury			Lock and tag out of service; immediately contact supervisor Remember to check for cracks on bed ears.
<ul style="list-style-type: none"> • Check for Broken lens/camera • Check visually for physical damage to back-up alarm • Check all Lights 				
Go back to rear of truck				
<ul style="list-style-type: none"> • Inspect the Tire for: <ul style="list-style-type: none"> ○ Check for inflation/bulging ○ Check for Damage which includes the following: <ul style="list-style-type: none"> ▪ Cuts ▪ Sidewall cuts ○ Inspect Rim ○ Inspect Rings (bead & lock) 	High cost, damage, replacement availability			A low tire will bulge on the bottom
	Possible safety issue			If sidewall cuts bulge all the time, contact supervisor
	Possible failure or safety issue			Check for cracks, bending
	Possible failure or safety issue			
Inspect visually the right side of truck engine for the following:				
<ul style="list-style-type: none"> • Inspect intake air boots 	Critical to prevent engine failure and major down time			
<ul style="list-style-type: none"> • Inspect the Fan, alternator 	Possible engine failure and down time. Personal injury.			Bolts intact
<ul style="list-style-type: none"> • Inspect fuel filter and fuel lines for leaks 				
<ul style="list-style-type: none"> • Inspect Steering hoses 	Loss of operator control, property damage and personal injury/death			

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> • Inspect Radiator hoses 	Could lose an engine, down time			
<ul style="list-style-type: none"> • Check clamps 				
<ul style="list-style-type: none"> • Inspect wheel for the following: <ul style="list-style-type: none"> ○ Inspect seals 	Equipment damage, down time, possible personal injury			Oil in wheel, look for oil starting to pour. Contact supervisor if conditions are found.
<ul style="list-style-type: none"> ○ Inspect brake pad 	Equipment damage, down time, possible personal injury			cracks in discs, wear
<ul style="list-style-type: none"> ○ Check for missing or loose lug nuts and wedges 	Equipment damage, down time, possible personal injury			Check for spun (shiny metal)
<ul style="list-style-type: none"> ○ Inspect the Tire for: <ul style="list-style-type: none"> ▪ Check for inflation/bulging 	High cost, damage, replacement availability			A low tire will bulge on the bottom
<ul style="list-style-type: none"> ▪ Check for Damage which includes the following: <ul style="list-style-type: none"> • Cuts 				
<ul style="list-style-type: none"> • Sidewall cuts 	Possible safety issue			If sidewall cuts bulge all the time, contact supervisor
<ul style="list-style-type: none"> ○ Inspect Rim 	Possible failure or safety issue			Check for cracks, bending
<ul style="list-style-type: none"> ○ Inspect Rings (bead & lock) 	Possible failure or safety issue			
<ul style="list-style-type: none"> ○ Inspect Front trailing arm for cracks 	could cause property damage and personal injury			Lock and tag out of service and Notify supervisor immediately
<ul style="list-style-type: none"> ○ Inspect Tie rod end 	Could lose control of truck; could cause multiple serious injuries and property damage			Show trainee a loose tie rod for reference
<ul style="list-style-type: none"> ○ Inspect Struts <ul style="list-style-type: none"> ▪ Check for Leaks in cylinders 				Oil leaks indicates damage
<ul style="list-style-type: none"> ▪ Check for broken bearings 				
<ul style="list-style-type: none"> ○ Examine Steering cylinders <ul style="list-style-type: none"> ▪ Check pins/bearings 				

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> ▪ Check for oil leaks 				
Check Hoist cylinders on both sides of truck				
Front of truck				
<ul style="list-style-type: none"> • Check Grill for damage 				
<ul style="list-style-type: none"> • Check Handrails 	Could contribute to slip and falls, and other injuries			
<ul style="list-style-type: none"> • Check Steps and Ladder 	Could contribute to slip and falls, and other injuries			
<ul style="list-style-type: none"> • Check Head lights in place 	Could result in poor visibility, property damage, and/or personal injury			
<ul style="list-style-type: none"> • Check Strobe lights in place 				
<ul style="list-style-type: none"> • Check actuator on fire suppression system 				Ensure red plunger is intact
Examine Dozers				Do not work on dozer if operator is in the cab – company policy
Ensure blade and ripper are on the ground	Unplanned motion of blade/ripper could result in personal injury			
Check the push arm on the left side for cracks and ball wear	Major maintenance problems could occur, lose cylinders, etc.; Major \$			
Check tracks-left side				
<ul style="list-style-type: none"> • Check for broken/missing pads 	Fall hazards could result in personal injury			
<ul style="list-style-type: none"> • Check bushings for wear 				
<ul style="list-style-type: none"> • Check pins for stretch 				
<ul style="list-style-type: none"> • Check for missing bolts 				
<ul style="list-style-type: none"> • Check bottom roller bolts 				
<ul style="list-style-type: none"> • Check Front and rear idler bolts 				
<ul style="list-style-type: none"> • Check final drives for heat 				
<ul style="list-style-type: none"> • Check Segment bolts 				
Check cylinder pins (upper and lower)				
<ul style="list-style-type: none"> • Examine for Missing or broken bearings 				
Check fire extinguisher	Limits your fire fighting			All mobile equipment must have a fire extinguisher – company policy

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Check blade yoke and pins for missing bushings/pins and wear	Major maintenance problems could occur, lose cylinders, etc.; Major \$			
Check grab rail	Mounting/Dismounting safety; fall prevention			
Walk to front to dozer				
<ul style="list-style-type: none"> • Check for missing bolts in cutting edge • Check skin on blade 				
Walk to right side				
<ul style="list-style-type: none"> • Check tracks-right side <ul style="list-style-type: none"> ○ Check for broken/missing pads ○ Check bushings for wear ○ Check pins for stretch ○ Check for missing bolts ○ Check bottom roller bolts ○ Check Front and rear idler bolts ○ Check final drives for heat ○ Check Segment bolts 	Fall hazards could result in personal injury			
Walk to rear of dozer				
<ul style="list-style-type: none"> • Check ripper pins, bushings, cylinder leaks, and missing ripper tooth (teeth) • Ensure fire suppression canisters are intact 	Control fire			
Crawl underneath dozer				
<ul style="list-style-type: none"> • Check for major oil leaks 	Equipment damage; fire hazard			Immediately shut down, lock & tag out and report it to supervisor
<ul style="list-style-type: none"> • Check belly pan bolts are in place 	Belly Pan falling off could result in equipment damage			
<ul style="list-style-type: none"> • Check seals on pivot shaft • Check roller and idler bolts (left and right) 				
<ul style="list-style-type: none"> • Check equalizer bar (E-Bar), center pin, left & right outer pins 				Check for tightness
Crawl out the front of the dozer				

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> • Check stabilizer arm 	Equipment damage and \$			
Mechanic Truck				This is the MSHA required safety exam for your service truck
Conduct Pre-shift				
<ul style="list-style-type: none"> • Check Seat Belt 	Potential for serious bodily injury			Refer to company policy
<ul style="list-style-type: none"> • Check back up alarm while in cab 	Potential for serious bodily injury and property damage			Must be audible – company policy
<ul style="list-style-type: none"> • Check cab for extraneous materials 	Could cause personal injury and property damage			
<ul style="list-style-type: none"> • Check parking brake 	Potential for serious bodily injury and property damage			
<ul style="list-style-type: none"> • Check forward horn while in cab 	Potential for serious bodily injury and property damage			
<ul style="list-style-type: none"> • Check radio/communication 				
<ul style="list-style-type: none"> • Check all lights 				
<ul style="list-style-type: none"> • Check glass for cleanliness and damage 				
<ul style="list-style-type: none"> • Check Fire extinguishers 	Limits fire fighting ability			
<ul style="list-style-type: none"> • Check bay doors 				
<ul style="list-style-type: none"> • Chock Tires 	Required every time you are under truck to prevent unplanned motion			Chock tires before crawling under truck. Chock tires when parked on incline; refer to company policy
<ul style="list-style-type: none"> • Check tires 				Tap with hammer
<ul style="list-style-type: none"> • Look underneath <ul style="list-style-type: none"> ○ Check Oil leaks ○ Check Drive shafts 				
<ul style="list-style-type: none"> • Ensure acetylene and oxygen tanks are secured and stored upright 	To prevent injury and property damage			
<ul style="list-style-type: none"> ○ Check gauges and gauge guards 	To prevent injury and property damage			
<ul style="list-style-type: none"> ○ Ensure hoses are rolled up 	Slip and tripping hazard			
<ul style="list-style-type: none"> • Ensure crane is cradled and electrical wires are connected 				

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> Check bumper for loose materials 	Loose materials can fall off bumper and could be struck by company or public vehicles			Refer to Company policy
<ul style="list-style-type: none"> Remove extraneous materials from bed of truck 	Slip/Trip Hazards resulting in injuries			
<ul style="list-style-type: none"> Remove chocks and store in truck 				
<ul style="list-style-type: none"> Complete and turn in inspection sheet 	Company/location policy			
<ul style="list-style-type: none"> Put on seat belt 	To prevent injury			Company policy
<ul style="list-style-type: none"> Sound horn before moving 	To prevent injury			Company policy
<ul style="list-style-type: none"> Drive defensively 	To prevent injury and property damage			

Duty 3: Examine Work Areas

Learner will demonstrate how to conduct a safe and thorough work area examination. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. A safe and thorough work area examination includes the following steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Establish communications				
<ul style="list-style-type: none"> CB channels 				Demonstrate use
<ul style="list-style-type: none"> Company FM radios 				Demonstrate use
Examine Pit areas				
<ul style="list-style-type: none"> Examine Haul Roads for Congestion & traffic patterns (English/American) <ul style="list-style-type: none"> Examine Intersections <ul style="list-style-type: none"> Mine 	Prevent collisions causing personal injury and property damage			
	Prevent collisions causing personal injury and property damage			

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> • Public 	Prevent collisions causing personal injury and property damage			Stop/Yield Right of way to public vehicles
<ul style="list-style-type: none"> ○ Check for Equipment ○ Check for Pick-up trucks 				
<ul style="list-style-type: none"> ○ Check for Persons on the ground/in area 	To prevent injuries			
<ul style="list-style-type: none"> ○ Observe Condition of haul roads 				
<ul style="list-style-type: none"> • Check for Debris(rocks), Soft Spots, & Holes 				
<ul style="list-style-type: none"> • Observe Wet/dry and visibility conditions 	To maintain control of vehicle and prevent collisions causing personal injury and property damage			
<ul style="list-style-type: none"> ○ Observe berms 				Report berm defects to supervisor
<ul style="list-style-type: none"> ○ Maintain Spacing 	To prevent collisions causing personal injury and property damage			Keep safe distance between mobile equipment; use three second rule
<ul style="list-style-type: none"> • Enter the pit 				
<ul style="list-style-type: none"> ○ Examine ramp and look ahead for drop offs 	To maintain control of vehicle and prevent collisions causing personal injury and property damage			
<ul style="list-style-type: none"> ○ Communicate with trucks or other equipment as to where you are going 	Prevent collisions with other vehicles; could get ran over			
Examine Shop area				
<ul style="list-style-type: none"> • Examine Inside shop 				
<ul style="list-style-type: none"> ○ Use Required PPE 	To prevent injuries			Company policy: hard hats, steel toe shoes, & safety glasses with side shields
<ul style="list-style-type: none"> • Look for slip & fall hazards 	Slip & Fall hazards are major contributing factors to mining injuries			Use oil dry to clean up all Oil, grease, water, & hydraulic fluids
<ul style="list-style-type: none"> • Remove other housekeeping hazards 	Slip, Trip, & Fall hazards are major contributing factors to mining injuries			Maintain supervisor policy, Trash, shop rags, flammable storage, pallets, Used parts and materials

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> ○ Look for Trip & Fall Hazards 	Slip, Trip, & Fall hazards are major contributing factors to mining injuries			Air hoses, Cables, tools, parts, cribbing and extraneous materials Roll up all cables, cords, & hoses and pick up cribbing, tools, and extraneous materials
<ul style="list-style-type: none"> • Observe if clear access is provided to Fire Extinguishers, and electrical boxes 	Provides access to fire equipment and electrical components			If these areas are obstructed, you are to Immediately provide clear access
<ul style="list-style-type: none"> • Maintain clear access to first aid equipment and supplies 	Provides access to emergency equipment			Keep eye wash station clean; keep supplies stocked
<ul style="list-style-type: none"> • Maintain clear access to all exits 	Could result in death or serious injury			
<ul style="list-style-type: none"> • Maintain proper illumination 	Helps avoid personal injury and property damage			
<ul style="list-style-type: none"> • Check ventilation controls 				
<ul style="list-style-type: none"> • Observe compressed gas cylinders 	Pressured tanks could become rockets and bombs			All unguarded valves must be protected and secured
<ul style="list-style-type: none"> • Examine Outside of Shop 				
<ul style="list-style-type: none"> • Keep area clean 	Slip, Trip, & Fall hazards are major contributing factors to mining injuries			Pick up cribbing, blocks, trash, & used parts; use dumpster where provided
<ul style="list-style-type: none"> • Secure compressed gas cylinders, use storage area provide, and observe the no smoking rule 	Pressured tanks could become rockets and bombs			All unguarded valves must be protected and secured
<ul style="list-style-type: none"> • Observe metal rack for material storage and cleanliness 				Be aware of sharp points
<ul style="list-style-type: none"> • Adjust your work based on weather conditions to avoid slip and fall hazards 	Slip, Trip, & Fall hazards are major contributing factors to mining injuries			Be aware of snow accumulation on roof, Rain/snow/ice, ground conditions (mud), & Dust
<ul style="list-style-type: none"> • Observe traffic and equipment in the area 	Sometimes area is congested			Including vendors
<ul style="list-style-type: none"> • Park service trucks in specific area 				North and East sides of Building
<ul style="list-style-type: none"> • Check fuel storage area 				Water inside of containment area
<ul style="list-style-type: none"> • Tank leaks & Fire Extinguishers 	Environmental and fire hazards are possible and expensive to clean up			Two extinguishers required

Duty 4: Working on Equipment in Pit and Shop

Learner will demonstrate how to safely and efficiently work on equipment in the pit and shop areas. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient maintenance and repair of equipment in the pit and shop includes the following steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Determine if downed equipment can be moved, move to another location, and coordinate maintenance work with pit boss.	Reduce exposure to hazards			Maintain safe work area; Estimated time to repair equipment; ask about blasting times & locations
Have operators position equipment in a safe area to be worked on	To prevent property damage and serious personal injury			Refer to company policy
<ul style="list-style-type: none"> Park equipment away from highwalls and spoil area 	To prevent property damage and serious personal injury			Refer to company policy
<ul style="list-style-type: none"> Park equipment out of traffic pattern 	To prevent property damage and serious personal injury			Refer to company policy
<ul style="list-style-type: none"> Have operators exit equipment (unless needed for testing) 	To prevent property damage and serious personal injury			Refer to company policy
<ul style="list-style-type: none"> Attach keys to tag out and place on steering controls 	To prevent property damage and serious personal injury			Refer to company policy
Examine immediate work area				
<ul style="list-style-type: none"> Look for slip, fall and falling materials hazards 	Slip & Falls are leading cause of mining injuries			Clean up immediate work area of Grease, Oil, Mud, Water, Hydraulic fluid, Anti-freeze, Snow/ice/rain, & Rocks. Check the underside of the equipment. Be sure to look up to see if there may be material that could fall onto you from equipment that has been operated in adverse weather conditions, i.e. ice, mud, etc.

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> Examine Highwall/spoil 	Prevent being struck by falling material			Check for Loose material, Major cracks, Mud slides, Movement, Overhangs, Slips, Water running off highwall, and Weather conditions If at all possible, do not work between highwall/spoil and equipment. If you must work in pit, keep equipment as far away from highwall/spoil as possible.
<ul style="list-style-type: none"> Determine if equipment is loaded or unloaded, especially trucks 	Prevent being struck by falling material			Truck may have to be unloaded with a different piece of equipment.
<ul style="list-style-type: none"> Barricade work area if necessary for traffic control or falling materials 	Prevent exposure to traffic & falling materials hazards			

Duty 5: Mounting & Dismounting Equipment

Learner will demonstrate how to properly mount and dismount equipment. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Proper mounting and dismounting of equipment includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Ensure equipment is blocked/chocked from unplanned movement	Unexpected movement can cause personal injury or death			Company policy
Visually examine ladders, steps, and handholds	Slips and falls are the number three cause of accidents			Oil, grease, mud and make sure steps/ladders are in good shape Clean if needed

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Use the three points of contact	Slips and falls are the number three cause of accidents			Use ropes to raise up supplies if necessary, do not hurry climbing ladder, use all steps in sequence, do not jump, and face machine
Check and clean the bottom of shoes				Wear proper footwear Consider the surface you are going to be working on Company policy

Duty 6: Working from Elevated Areas

Learner will demonstrate how to work safely in elevated areas. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. The proper procedures for working safely in elevated areas include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Determine if you need to steam/clean area	Could be oil covered			
Inspect and put on your fall protection equipment	To detect any defects and ensure that you are wearing the fall protection properly			Demonstrate the right way to put on fall protection Discuss lanyard length Company policy
Use fall protection	To prevent serious injury or fall			
Determine if you need a man-lift, ladder, or additional help	Important to use the right equipment for the job and basic work procedures			
<ul style="list-style-type: none"> Communicate with co-worker 				
Operating the manlift				Do not operate man lift until you have completed task training on the lift
<ul style="list-style-type: none"> Ensure handrails/guardrails are in place and in good condition on the manlift 	Falls occur because of the lack of adequate handrails and guardrails			

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> Use fall protection (required) 	Manlift can fail and people can still fall			
<ul style="list-style-type: none"> Follow company policy on operating manlift 	Require to be task trained before operating the manlift			
Using ladders				
<ul style="list-style-type: none"> Use the right ladder for the job 	Falls has happen because of use of wrong ladder			Never climb on top step Secure ladder if needed Refer to ladder safety sheet

Duty 7: Equipment Cribbing

Learner will demonstrate how to safely and thoroughly crib equipment. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and thorough cribbing of equipment includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Ensure stable foundation for cribbing and jacking	Without stable foundation cribbing and jacking will not be stable			Weather conditions
Determine method of lifting equipment prior to cribbing	State of machine could determine lifting method			Hydraulic equipment and/or jacks are used for lifting only – cannot be used as cribbing.
<ul style="list-style-type: none"> Using hydraulic jack 	Prevent personal injury or death			Know jack and hose rating and check gauge
<ul style="list-style-type: none"> Using machine hydraulics 	Prevent personal injury or death			Check machine hoses Test the machine drift from hydraulic leaking off prior to cribbing
Determine cribbing needs for the equipment being worked on	Prevent personal injury or death			Spacing, weight, and type of repair to be performed
Obtain cribbing materials	Use proper lifting and handling techniques			Improper lifting and handling causes injuries. Get additional help if needed

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> Use solid cribbing such as straight-grained hardwood 	Hardwood provides strength and durability/splitting/crushing			Check condition of cribbing material and discard damage or defected material
<ul style="list-style-type: none"> Use rated or approved metal jack stands on solid surface 	Accidents happen using underrated stands and unstable foundation			Use only proper pins (not bolts) Use rated or approved stands Know the capacity of stand
Lower machine weight onto cribbing	Lets you know if the cribbing will hold the weight of the machine			Recheck the stability of cribbing
Lower and lock all machine components to ground	Prevents movement of machine and provides additional support			

Duty 8: Replacing a Hydraulic Hose

Learner will demonstrate how to safely and efficiently replace a hydraulic hose. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient replacement of a hydraulic hose includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Make sure all implements are at rest	Prevent personal injury or death			
Shut down machine	Ensures that hydraulics are off			
Block against motion	Prevent unexpected movement when you unhook the hydraulics			
Relieve tank pressure	This reduces hydraulic fluid flow (line is still pressurized)			Be aware of hot hydraulic oil Wear PPE – Glasses & Gloves
Hold vacuum on tank when needed	Prevents loss of oil			If in question, ask experience help because this does not apply to all applications
Clean work area and hose connections	Prevents slips, falls and contamination			

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
<ul style="list-style-type: none"> Cover hose end with shielding material 	This helps prevent exposure from hot or pressurized oil			Wrap in rags, etc.
<ul style="list-style-type: none"> Wiggle until fluid flows 	This helps prevent exposure from hot or pressurized oil			
Remove hose				
Install new hose				
<ul style="list-style-type: none"> Use hose that meets manufacturer specification 	Prevents personal injury and property damage \$			Refer to parts manual or ask
<ul style="list-style-type: none"> Ensure new hose is clean 	Prevent machine damage			Clean ends and inside of hose to prevent contamination
<ul style="list-style-type: none"> Reinstall all factory clamps 	Prevent personal injury from hose failure Many equipment fires are due to improper routing of hydraulic hoses			Prevent premature failure due to rubbing, pinching, kinking
Leave area of repair	Because hose may rupture when machine is started			
Restart machine	Beware of people in area			Check hydraulic fluids level and bleed system if necessary
Check for leaks				
Clean up work area	Machine may require steam cleaning before put back into service			

Duty 9: Changing Dozer Rollers

Learner will demonstrate how to safely and efficiently change dozer rollers. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient changing of dozer rollers includes the following steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Place machine on clean, level spot	Prevent personal injury and makes job easier			

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Clean off the top of the roller frame				
Chain major bogey to the side frame while machine is setting on ground	Prevent movement and personal injury			Visual check chain
Relieve track tension				
Raise the machine using the blade and/or ripper				Test hydraulics for drift
Insert beam or spacing tool between rollers on minor bogey and track	You could lose a finger, hand, and/or arm			Refer to diagram Use the right tooling
Lower dozer back down	Make sure dozer is resting on tooling			
Obtain and use proper lifting device	Prevent personal injury			Use saddle beam or fork truck Refer to mfg's manual Caution on hotness of roller
Ensure two inside bolts are in place	Because when we remove the two outside bolts nothing will hold the roller in place if these bolts are missing			
Remove the outside two bolts first				Must be removed before installing the tooling
Install lifting device				
Go under tractor to loosen two inside bolts	To ensure tooling is supporting the roller			Make sure the roller stays against frame
Remove inside two bolts				
Lower from under machine	Could roll off on your foot or cause injury			
Reverse procedure to install new roller				

Duty 10: Replacing Shovel Crowd or Level Cylinder

Learner will demonstrate how to safely and efficiently replace a shovel crowd and level cylinder. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient replacement of a shovel crowd and level cylinder includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Place shovel in a safe and level location	Level location is important for support equipment use to do this job			
Use man-lift or bucket truck	Using the manlift or bucket truck makes this job easier and safer			Refer to company policy on manlift use. MSHA task training required for each machine operated.
Secure cylinder by chaining bottom of boom	Prevents the cylinder from unwanted movement			Use minimum 3/8 chain Ton and half come along
Remove stick end pin using a pry bar and sledge hammer	Caution must be taken when pulling this pin			Check with lead man
Retract and secure cylinder rod completely with chains	This must be done for safety and balancing cylinder			
Lock controls				
Shut machine down				
Bleed hydraulic system using valve and auto shut down switch	This reduces hydraulic fluid flow (line is still pressurized)			Be aware of hot hydraulic oil Wear PPE – Glasses & Gloves Leave key on for shut down switch to work
Remove hydraulic hoses	Prevent personal injury			Refer to procedures
Cap hoses	Prevent contamination			
Position forklift under cylinder	To support the cylinder			Check for clearance/balance Use special forks and cradle
Secure cylinder to the forklift with rated come-alongs	This is critical because we are in an elevated position with people in the area			
Remove second pin	Caution must be taken when pulling this pin			Check with lead man
Lower cylinder slowly and beware of surroundings	Prevent personal injury and property damage			
Remove old cylinder with mechanic crane truck				
Replace cylinder				

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Reverse procedure for installing new cylinder	Same dangers exist installing as removing			
Close bleed off valves				
Charge the system (start shovel)	People are in the area			
Bleed air from cylinder at bleeder ports	Prevent cavitations and ensures smooth operation			Warranty requires this
Remove the specific forks off forklift				

Duty 11: Using Cutting Torch (from service truck at equipment)

Learner will demonstrate how to inspect the cutting torch before use, thoroughly inspect and prepare the work area/site for cutting, and safely use the cutting torch. Learner will also explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and thorough equipment and work area/site inspections, preparation, and safe use of the cutting torch include the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Use required PPE	Protects you from materials that may be hot			Face shield, gloves, leather welding vest, safety glasses, footwear, secure pant legs
Remove all personal combustible items	Eliminates possible explosion causing injury			Matches and lighters Check clothing for combustibles
Inspect (visual) equipment and area	Equipment has been destroyed			Accumulation of flammable/combustible materials
Wash down or wet area	Help prevents fire			
Identify and inform personnel exposed to worksite	Protects you and others working on equipment			
Barricade area affected if necessary	Prevents people walking into hazards areas			

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Maintain proper ventilation	Health hazards (fumes/oxygen deficiency)			Use confined space guidelines
Examine work area for hazards near the cutting site	People have cut into or through things that have caused fires or explosions			Refer to examine work areas Fuel tanks, hydraulic tanks, hoses, electrical wires
Establish fire watch	Safeguard against fire			
Use fire blanket when needed	Protects other machine components			To protect electrical harness, cylinder rods, glass, hoses
Hook up torch				
Stand to side while pressurizing the gauges	Gauge or regulator could blow out causing personal injury or death			
Observe gauges for operating pressures				Acetylene pressure should not exceed 15 PSI Oxygen-40lbs
Check tip condition				
Check for installation of flash back arrestor	Prevents explosions and flashbacks			Mandatory-company policy
Check hoses for damages	Prevents fires and personal injuries			Burn spots, cuts, holes, kinks
Locate and position fire equipment	Small fires become big fires quickly			Fire extinguisher and fire suppression cart
Disable automatic mode of fire suppression system	Prevents accidental discharge of fire suppression system			Refer to disarming procedures Make sure you rearm the system after the work is complete
Light torch				See JTA for Burning and Welding
Re-arm the fire suppression system on equipment				
Return fire extinguishers and cart				

Duty 12: Dropping the Belly Pan

Learner will demonstrate how to safely and efficiently drop the belly pan. Learner will explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient dropping of the belly pan includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/ Notes/Comments
		1=Important 2=Very Important 3=Critical		
Obtain sheet steel for field installations	Provides stable base for handling belly pan			Company policy
Determine a level, dry and remote location to perform work	Provides stable base and keeps you away from other mining activities			
Place pan cradle on jack				
Position jack and metal for field work	Provides for safe handling of belly pan			
Position dozer over jack and metal	Eliminates strains and sprains			
Lower all implements	Prevents unexpected movements			
Lock out and tag equipment	Prevents unexpected movements			Company policy
Center jack under pan to be removed	Centered for proper balance			Weight of pan on jack and wear kneepads
Ensure that all pan bolts are in place	Ensure that you don't lose control of pan			Accidents have occurred
Pull hinge pin on pan				
Loosen until one full nut thread remains on all four bolts	Maintain control of pan			
Lower jack to check to ensure pan is free-resting on nuts, jack, and cradle	Allows pan to break free from the machine			
Raise jack back up to take the weight of pan	Ensure that the pan does not fall when nuts are removed			
Remove all four nuts				
Stand clear	Prevents pan from falling on you			
Lower jack				
Reinstalling belly pan				

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Reverse procedure	You are exposed to the same hazards that you were exposed to taking the pan down			Pan may not align with bolts. In this case manual alignment maybe necessary. Try to get one bolt down through the pan; install nut with all the thread you can get. Finish aligning pan. Pull bolts through pan. Install nuts and tighten.
Store jack				
Clean work area				

Duty 13: Hinging Belly Pan

Learner will demonstrate how to safely and efficiently hinge the belly pan. Learner will explain the job steps, why they are conducted, any associated risk, and how to implement appropriate controls. Safe and efficient hinging of the belly pan includes the following job steps:

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Determine a level, dry, and remote location to perform work	Provides stable base and keeps you away from other mining activities			
Position your service truck				
Dig out roller frame				
Run crane cable between roller frames and track				
Center cable under pan				
Secure cable to track pad on opposite side	If not hook well, the cable may come off			
Tighten tension on crane cable	Maintain control of pan			

Job Steps	Importance Narrative (Consider Safety, Production, Maintenance)	Importance Ranking	Satisfactory or Needs Work	Procedures/Risk Resolution/Notes/Comments
		1=Important 2=Very Important 3=Critical		
Place blocking in desired area				
Make sure all hinge pins and brackets are in place	Serious injuries have occurred because hinge pins were missing or damaged and someone removed nuts			
Make sure all four nuts are in place				
Loosen all nuts until one full nut thread remains on each bolt				
Release cable tension slowly until pan is free				
Tighten tension on crane cable so nuts can be removed				
Remove nuts opposite of the hinge first				
Remove hinge side nuts last				
Remove yourself from area	Prevent yourself from being struck by pan			
Release cable tension slowly until pan is resting on block				
Make repairs				
Tighten crane cable				Start raising pan in position
Install hinge side nuts first				
Install opposite side nuts last				
Tighten all nuts				
Unhook crane cable				
Retract crane cable				
Clean area				