USDA	U.S. Department of Agriculture Forest Service	1. WORK PROJECT/ACTIVITY	2. LOCATION	3. UNIT
		Trail Tractor Operation	Los Padres National Forest	MRD/SLRD/MPRD SBRD/ORD
	JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)	4. NAME OF ANALYSTS	5. JOB TITLE	6. DATE PREPARED
		Multiple	Multiple	12/18/2018

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
Training Requirements	Injuries due to inadequate training	Trained personnel in possession of a current Red Cross First Aid Certificate or its equivalent must be immediately available at the jobsite. Operators must have completed an approved basic and advanced tractor trailer training, pass a written test and be signed off for operation of the tractor trailer.
Personal Protective Equipment	Head injury, cuts, hearing loss, eye injury, abrasions, burns	Safety glasses, leather boots, protective gloves, hearing protection, hard hats meeting the ANSI Z89.1-2003 standard, long pants and long sleeves shall be worn by operators and swampers.
Tailgate Safety Session	Medical response delays, injuries due to poor communication/poor planning	Review the work assignment and objective. Review the medical/emergency evacuation plan. Ensure that an approved first aid kit is on site. Assign first aid and communications leads. Encourage operators to stay hydrated, carrying plenty of water.
Pre-Work Inspection	Injuries due to equipment damage and disrepair	Visually inspect areas of metal to metal contact, areas with ground or rock contact, and freshly scratched or abraded areas. Look for fluid leaks.
Fueling the Tractor Trailer	Petroleum/Wildland Fire	No smoking or open flames while inspecting for fluid leaks, checking fluid levels or adding flammable fluids.
	Skin or eye contact with petroleum products	Wear close fitting gloves and eye protection while inspecting and filling petroleum products. Have waterless hand cleaner and clean rags available.
Working on the Tractor Trailer	Bruising or crushing of extremities due to loose covers	Place loose covers where they will not fall or be a tripping hazard.
	Dust inhalation	Stand upwind when dumping pre-cleaner
	Slipping while entering or exiting the machine	Maintain a three-point contact with the foot and hand holds. Face the machine while entering or exiting. Never jump on or off the machine. Never attempt to

		mount or dismount a moving machine.
	Being pinned or crushed by a rolling machine	Start the machine only from the operator's seat. Engage parking brake before starting the machine. Warn other workers and bystanders before starting. Do not start until everyone is clear of the machine. Check parking brake operation daily.
	Being pinched or crushed by moving parts	Keep hands and feet away from moving parts. Do not wear loose clothing that may be caught in moving parts. Before testing controls, warn others to stay back from the machine.
	Equipment malfunction or unexpected breakage	Check operation of all controls for freedom of movement and return to neutral position. Check for machine creep with steering levers in neutral position. Repair sticking or malfunctioning controls before operating the machine.
	Igniting a wildland fire	Check exhaust and spark arrestor (if equipped) for proper operation. Avoid slipping of tracks. Carry an ABC fire extinguisher on the tractor trailer.
Loading and Unloading	Machine slips off loading ramps	Keep all personnel away from loading/unloading operations except the spotter. The spotter should remain a safe distance away from the loading ram area. Ramps are proper size and strength to satisfy track width and weight of the machine. Load and unload on level ground free of obstructions. Kep trailer bed and ramps clear of mud, oil, ice, snow and all materials that can become slippery. Chock trailer wheels so that it cannot move. Load the machine slowly with the blade as low as possible without contacting the trailer.
	Improper weight distribution on a trailer	Position the machine so weight is evenly distributed on trailer axles, and tongue weight is within acceptable range. Center the machine on the trailer bed.
	Machine shifting on trailer chains and binders	Use the correct strength and type of chain on binders. The combined strength of all tie downs must be strong enough to lift 1 1/2 times the weight of the machine.
Walking the Tractor Trailer to the Job Site	Tipping the machine over on uneven ground	Watch for rocks, ditches, logs or other obstructions that could tip or damage the machine. Travel slowly on rough terrain or side slopes.
	Being struck by branches	Watch for protruding tree branches and/pr brush. Remove or avoid obstructions that would strike the operator.
	Obscured vision	Do not allow the blade or other attachments to obstruct your vision. Keep them as low as possible for maximum visibility and stability.
	Excessive speed	Operate the machine at speeds where the operator has complete control and time to react to changing conditions.
	Carrying passengers	Do NOT carry passengers.
	Other traffic	Be alert for other vehicles. Give the right of way to other traffic unless they clearly signal the operator to proceed.
Inspection of the Job Site	Natural hazards	Understand the specifications for the job to be completed. Visually survey the

		work site for natural hazards (i.e. rock outcrops, holes, trees/branches, side slopes, soil type and composition, and any other roads and trails where traffic could enter the job site.
	Other personnel	Know and establish where other personnel will be working in the general area. Have signals established and all personnel be familiar with them. Know if the area is open to public use and how public will be warned of work being done in the area.
	Other equipment and supplies	Know and agree where other equipment and supplies will be located or working to avoid conflicts.
Trail Construction	Work site	Flag potential hazards: 1, Rock outcrops 2. Holes 3. Trees and branches 4. Other roads and trails 5. Side slopes and soil composition
	Wildfire	Know fire conditions and establish an escape route.
	Working distance from the machine by other workers	Swampers should maintain a distance of 10 feet from the front and sides of the trail tractor and 25 feet from the rear. NO personnel should work or stand below the machine on sloped ground.
	Ripping	Always use extra caution while ripping. While ripping, use caution not to spin tracks on the outside slope. Always rip in a straight line, turning will cause ripper shanks to bend or break. When ripping on a steep slope, NEVER use a ripper shank on the outside or fill side of the trail. Failure to do so could cause the fill slope to fail and the tractor to be pulled down the slope.
	Turning around	NEVER try to turn around without adequate space for the rippers to clear cut the bank. ALWAYS turn around using the counter rotation method for turning. Make sure the fill bank is stable enough to carry the weight of the tractor. Always turn so that the blade is pointed out away from the hillside.
	Cutting	Always look over the ground to be constructed if you do not have a clear view. Begin any construction with a level, smooth, earthen platform of sufficient size to accommodate the tractor on compacted or native soil. Angle the blade into the hill to prevent pushing the tractor to the outside of the fillbank. Begin the cut with sufficient blade tilt to keep the tractor in a level aspect. Watch for rocks and roots which would catch the blade corner bit and kick the tractor to the outside of the fill slope. Only take the cut to allow for forward movement. As the blade begins to load up, raise the blade intermittently to allow for movement. DO NOT continue past where fill material ceases. Take successive passes to bring cut material down to planned level. Watch for rocks and trees/brush from falling onto or behind the tractor. Watch for obstacles (root wads or rocks) getting caught under tracks and high centering the tractor. Back off and take another cut to get under the obstacle and push it over into the fill

		bank. Watch for fill bank collapses or the tractor tilting. STOP the tractor and rotate the tracks to move the tractor back on level tread far enough to begin a new cut or fill the outside track.
	Filling	All of the precautions for cutting apply to filling with the addition of making sure the filled area is sufficiently compacted to support the weight of the tractor. Always leave a margin for error and unexpected encounters with unseen roots or large rocks. Layer the fills to allow for sufficient compaction.
Backing the Tractor Trailer on a Sidehill	Backing	BACKING HAS THE MOST POTENTIAL FOR HAZARDS. Make sure the back up alarm is in good working condition. Know where other employees are located. Make sure employees are a safe distance from the machine before backing up. Check for fallen rocks, stumps or other materials behind the tractor. Watch for breaking down of the outside fill slope or holes. Back straight. Do not back up the cut slope and put the tractor into a severe tilt. If unsure, use a spotter.
Installing Attachments	Remove existing attachment	Remove all ripper shanks and balance the ripper bar on the ground or on a stand of sufficient strength to carry the weight. Release hydraulic pressure before removing pivot pins. Remove pins with brass drift and single jack hammer. Keep feet and hands away from the frame and bar. Drive the tractor slowly straight forward away from the implement. Watch that the implement doesn't shift or fall off of the stand. Make sure the implement is well balanced and has a second person present to guide the tractor to the implement. Slowly back the tractor to the implement and guide it to the attachment pins. Attach hydraulic hoses to aid in positioning. Watch out for pinch points and falling attachment arms. Install lower pins first to stabilize the implement, then install the center lift pin.
Operating in Mud	Getting stuck or locking the track	Watch for high centering on belly pan or filling tracks with sand. If the tracks begin to lock up, stop and raise the tractor with the rippers and blade. Rotate track both forward and backward to clear tracks. Do not force the track in either direction.
Operating in Sand or Snow	Working in freezing weather	Do not leave the tractor buried in mud overnight if there is a possibility of freezing. Lift the tractor with the blade and rippers and rotate the tracks to clear them of heavy mud.
Operating in Rock	Breaking the track or starting a fire	Work slowly, try not to spin the tracks. Spinning cause sparks, which could ignite a fire. Working in rock can cause rocks to fall into the track system, which can stretch or break the track chain. Rocks can get into the track sprocket and cause the track to lock or break. Lift tracks often and clean tracks by rotating in both directions.

10. LINE OFFICER SIGNATURE	11. TITLE	12. DATE
	District Ranger, Santa Barbara District	4/9/19
	District Ranger, Ojai District	
	District Ranger, Mount Pinos District	3/13/19
	District Ranger, Santa Lucia District	
Timothy J Short	District Ranger, Monterey District	4-9-19

Previous edition is obsolete

(over)

JHA Instructions *(References-FSH 6709.11 and .12)*

The JHA shall identify the location of the work project or activity, the name of employee(s) writing the JHA, the date(s) of development, and the name of the appropriate line officer approving it. The supervisor acknowledges that employees have read and understand the contents, have received the required training, and are qualified to perform the work project or activity.

Blocks 1, 2, 3, 4, 5, and 6: Self-explanatory.

Block 7: Identify all tasks and procedures associated with the work project or activity that have potential to cause injury or illness to personnel and damage to property or material. Include emergency evacuation procedures (EEP).

Block 8: Identify all known or suspect hazards associated with each respective task/procedure listed in Block 7. For example:

a. Research past accidents/incidents
b. Research the Health and Safety Code, FSH 6709.11 or other appropriate literature.
c. Discuss the work project/activity with participants
d. Observe the work project/activity
e. A combination of the above

Block 9: Identify appropriate actions to reduce or eliminate the hazards identified in Block 8. Abatement measures listed below are in the order of the preferred abatement method:

a. Engineering Controls (the most desirable method of abatement). For example, ergonomically designed tools, equipment, and furniture.
b. Substitution. For example, switching to high flash point, non-toxic solvents.
c. Administrative Controls. For example, limiting exposure by reducing the work schedule; establishing appropriate procedures and practices.
d. PPE (least desirable method of abatement). For example, using hearing protection when working with or close to portable machines (chain saws, rock drills portable water pumps)
e. A combination of the above.

Block 10: The JHA must be reviewed and approved by a line officer. Attach a copy of the JHA as justification for purchase orders when procuring PPE.

Blocks 11 and 12: Self-explanatory.

Emergency Evacuation Instructions *(Reference FSH 6709.11)*

Work supervisors and crew members are responsible for developing and discussing field emergency evacuation procedures *(EEP)* and alternatives in the event a person(s) becomes seriously ill or injured at the worksite.

Be prepared to provide the following information:

a. Nature of the accident or injury *(avoid using victim's name).*
b. Type of assistance needed, if any *(ground, air, or water evacuation)*
c. Location of accident or injury, best access route into the worksite *(road name/number)*, identifiable ground/air landmarks.
d. Radio frequency(s).
e. Contact person.
f. Local hazards to ground vehicles or aviation.
g. Weather conditions *(wind speed & direction, visibility, temp).*
h. Topography.
i. Number of person(s) to be transported
j. Estimated weight of passengers for air/water evacuation.

The items listed above serve only as guidelines for the development of emergency evacuation procedures.

JHA and Emergency Evacuation Procedures Acknowledgment

We, the undersigned work leader and crew members, acknowledge participation in the development of this JHA *(as applicable)* and accompanying emergency evacuation procedures. We have thoroughly discussed and understand the provisions of each of these documents:

SIGNATURE	DATE	SIGNATURE	DATE
Work Leader			