

U.S. Department of Agriculture Forest Service JOB HAZARD ANALYSIS <i>(JHA)</i> References-FSH 6709.11 and -12 <i>(Instructions on Reverse)</i>	1. WORK PROJECT/ACTIVITY	2. LOCATION	3. UNIT
	Trail Maintenance & Construction	PSICC / Salida Ranger District	Salida
	4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED
	Ben Lara	Recreation Program Manager	February 22, 2019

<table border="1"> <tr> <td></td> <td>A</td> <td>B</td> <td>C</td> <td>D</td> <td>E</td> </tr> <tr> <td>1</td> <td>H</td> <td>H</td> <td>H</td> <td>S</td> <td>S</td> </tr> <tr> <td>2</td> <td>H</td> <td>H</td> <td>S</td> <td>S</td> <td>M</td> </tr> <tr> <td>3</td> <td>H</td> <td>H</td> <td>S</td> <td>M</td> <td>L</td> </tr> <tr> <td>4</td> <td>H</td> <td>S</td> <td>M</td> <td>L</td> <td>L</td> </tr> <tr> <td>5</td> <td>S</td> <td>S</td> <td>M</td> <td>L</td> <td>L</td> </tr> </table> <p> H = HIGH S = SIGNIFICANT M = MEDIUM L = LOW </p> <p> Probability A= Common or repeating occurrence B= Known to occur or "It has happened" C= Could occur, "I've heard of it happening" D= Not likely to occur E= Practically impossible </p> <p> Consequences 1= Fatality or permanent disability 2= Lost time injury or illness 3= Medical treatment 4= Incident report only 5= None </p>		A	B	C	D	E	1	H	H	H	S	S	2	H	H	S	S	M	3	H	H	S	M	L	4	H	S	M	L	L	5	S	S	M	L	L	Final Hazard Rating	
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SIGNIFICANT																																						


- References:**
- FSH 5109.17 Fire and Aviation Management Qualifications Handbook
 - FSH 7100 34.1 Fleet Management Qualifications
 - NWCG Training Course S-130/190 Basic Firefighter/Introduction to Fire Behavior
 - PMS 461 Incident Response Pocket Guide

7. IDENTIFY TASKS/PROCEDURES STEPS REQUIRED TO PERFORM THE TASK IN THE SEQUENCE THEY ARE CARRIED OUT.	8. POTENTIAL HAZARD LIST THE POTENTIAL RISK HAZARDS THAT COULD CAUSE INJURY / DAMAGE WHEN THE TASK IS PERFORMED	9. PROBABILITY	10. CONSEQUENCES	11. RISK LEVEL L S M H	12. HAZARD CONTROLS FOR EACH HAZARD IDENTIFIED LIST THE CONTROL MEASURES REQUIRED TO ELIMINATE OR MINIMISE THE RISK OF INJURY
Attitude of "Getting the job done by whatever means possible"	Attitude about safety, fear of reprisal and/or pressure to get work completed.	D	5	L	All individuals involved will participate in and support an environment where valid safety concerns can be raised and addressed without fear of judgement or reprisal. If at any point, a job is deemed unsafe, workers should feel entitled to stop until the appropriate PPE(Hard hat, gloves, long pants, long-sleeved shirt, protective eyewear, and sturdy hiking or work boots) or equipment is available, or until the right conditions exist to get the job done safely.
Travel on Forest Roads	Collision with other vehicles, animals or objects; Traffic/Vehicles	B	2	H	Drive defensively at safe speeds and use seat belts. Watch ahead for oncoming traffic, always have headlights on and pull over to right to let faster vehicles pass. When parking along the road, pull completely off. Do not block flow of other traffic on the road. Use mirrors and a spotter. If you don't have a spotter, get out and check behind your vehicle before

	Visibility				backing. Wear safety vests when working near roadways. Keep an eye out for vehicles and put up signs stating "Workers in the Road".
Working in backcountry and at high altitudes	Water quality, exhaustion, infection, altitude sickness Becoming lost or injured Water quality, dehydration, infections Solar Ultraviolet Radiation Sunburn, melanoma, retinal damage Poor Communication	C	3	S	Proper training; quality equipment; required PPE; always carry extra clothing layers and rain gear; rests and breaks as needed; maintain hydration; carry water filter. Learn signs and symptoms and treatment of altitude sickness and heed warnings. (HSC 11.2, 54.3) If lost or injured, select sheltered area and stay put; gather fuel for warming fire before dark; warmth and liquids are more important than food; put out visual markers if available. (HSC 11.2). Proper training, quality maintained equipment. Always assume water is unsafe for consumption until treated. (HSC 55.12e) Keep exposed skin to a minimum- wear a hat, bandanna, long pants and long-sleeved shirt. Wear sunglasses rated at 100% UV protection. Use protective sunscreen and lip protection. Have communication and emergency plan. Always have cell phone and/or satellite phone w/ adequate battery supply. Carry quick-charge battery to charge phone if needed. Carry SPOT or InREACH when working alone (HSC 11.12)
Hiking to work area or arriving at field location	Blisters, tripping, falling, cuts from tools, exhaustion	A	2	H	Proper fitness; Proper footwear and foot care. Hiking Boots- lace-up, with ankle support and lug soles. Use warm-up and stretching exercises. Maintain safe walking distance between people. Be aware of low hanging branches. Carry tools (with proper protective cover if available) on downhill side. Test and use secure footing, never run. Move away from areas of steep unstable terrain during hazardous weather conditions such as heavy rainfall or extreme winds. Be cautious on wet or icy and steep slopes. Check surfaces for environmental hazards before sitting. Always have a plan for evacuation.
Weather Hazards	Cold Weather- Hypothermia Hot Weather- Heat stress, heat exhaustion, heat stroke Lightning & Thunderstorms	D	3	M	Recognition of hypothermia-producing weather conditions and preparation for such. Know signs, symptoms and treatment of hypothermia. Maintain fitness and recognize risk factors. Avoid activities that increase risk factors. Always anticipate bad weather and carry proper clothing. Prevent dehydration, eat balanced diet and high energy snacks. (HSC 54.22) Individual's ability to heat tolerance is related to fitness, hydration, illness, medications and fatigue. Maintain fitness, drink plenty of water, and take breaks as necessary. Know signs, symptoms and treatment of heat related illness. (HSC 54.21) Always check weather forecast before heading out; always be alert to changing weather conditions, learn proper lightning position and assume when necessary, learn proper treatment for victims. Do not use radios or cell phones during a thunderstorm, put down all tools. (HSC 54.3)

Camping	Exposure to high winds, cold, lightning, falling trees, rising waters, rock fall or slides, animal encounters.	D	3	M	Carefully select your campsite. Look up, look around. Sites should be free of; widow makers, snags or other overhead hazards, leaning green trees, danger from rolling rocks and slides, danger from flash floods or rising waters, known animal problems or signs (tracks, scat, scrapes, kills and claw marks) . HSC 11.22, 53.71 Follow Leave-No-Trace Principles, secure all food and trash; If spike camping above treeline. Conduct safety session. Carefully plan. Know the weather forecast. If lightning is likely, defer spike camp usage. If storm begins to move in, consider changing your plans and descending to below treeline base camp. Select site sheltered from high winds and away from any lone tall objects. Assume lightning position within tent if lightning is near. Avoid touching wet tent material or any metal object such as tent poles or stakes. Avoid grouping tents too close together, keep a distance of twice the height of nearest tent. Communicate during storm by calling out to each other to ensure each others safety. (HSC 54.23)
Wildlife Encounters	Severe injury or death	D	1	S	Know and avoid habitat areas and aggression signs. Store food, garbage, toiletries property in bear-proof containers or locked in vehicles when not immediately monitored. Be aware of surroundings– don't surprise animals; make noise while traveling through areas of concern.(HSC 53.7.Do not threaten wildlife; talk to the wildlife in low soft tone and slowly back away at an angle; DO NOT RUN. use noise makers and talk loudly while you work to avoid an encounter (HSC 50-30)
Insects – ticks, bees, wasps, hornets, spiders	Allergic reactions, infections	D	3	M	Have appropriate removal devices (i.e. tweezers) for ticks and splinters. Note season and temperature prone to certain pollens, have medication or clothing to reduce exposure to insects and allergic reactions. Carry effective insect repellent; check clothing and body frequently especially when traveling through brushy areas; carry physician prescribed drugs if allergic. If a tick attaches, remove the tick and keep it stored for possible testing. Get to a doctor and get antibiotics ASAP to prevent Lyme's or several other infectious diseases (HSC 53.2, 53.4, 53.6)
Working with Tools, Carrying tools and Materials	Bodily Injuries	C	3	S	Proper training; Wearing required PPE; Use proper lifting techniques; (No one will work alone until they have demonstrated their ability in hand tool use. Make sure you are familiar with and know how to operate all tools you might use. If there is uncertainty as to the use of any tool, check with a supervisor/leader and learn proper operating techniques prior to using that tool; Carry tools on downhill side w/ sharpest edge facing down; store tools safely, when tools are not in use, place them in a predetermined location away from persons with cutting edges shielded and/or on the ground resting perpendicular to the slope and secured; Never use broken

					or damaged tools, Check frequently (at least daily) that hand tools are properly maintained. Only sharp and properly maintained tools should be available for use. (HSC 41.01-41.42.1)
Pruning or Limbing Tools, Hand saws	Eye impairment, cuts	B	3	H	Use saws properly and employ safe carrying technique. Tools sharpened and properly maintained. Wear appropriate PPE including eye protection.
Digging or auguring post holes	Arm/wrist injury, foot injury	C	3	S	Never operate a power auger alone. Use proper fuel mix and PPE. Watch for loose clothing and keep hands and feet away from bit. Make sure gloves, boots and long pants/long-sleeved shirts are worn. Use hand tools such a shovel, post-hole digger and bar to create and clear hole. Watch for heat exhaustion. Don't over-exert.
Rock Work A) Transporting Rocks to worksite – rolling, carrying, rock litters B)Lifting/Shifting Rock C) Use of Rock Bars D) Breaking, shaping, chipping rocks E) Constructing rock structures on busy trails	Bodily injuries, , smashed body parts, back injury, muscle strains, eye damage, Runaway rocks ,Injuries to visitors	C	3	S	Proper training; use PPE including eye protection; use correct lifting techniques; (HSC 39.64) allow no workers below rocks being moved or used. Communicate constantly with other workers and/or visitors; steep slopes – stay below rock and slide it on a flat side, put pressure on uphill side of rock; lower angle slopes – roll rock away from you using proper lifting technique; never use bent or broken rock bars; never cross bars; do not mix hands and bars; keep hands in “open grip” position to prevent smashed fingers and tape or coat handles for better grip; keep mouth closed to prevent chipped teeth; keep free body parts away from areas where hammer may glance. Use tools and leverage as much as possible; move slowly, avoid jerking rock or rocking it side to side; measure and shape holes before inserting rock. Be aware of approaching traffic; post lookouts on busy trails or in dangerous situations; post signs where visitors enter project area; stop hammer when visitors approach; move tools and gear off the trail to ensure a safe path for visitors to pass through; communicate up the line when visitors are approaching.
Pick Up Trash	Sharps, Chemicals, Bloodborne Pathogens, Spiders, Snakes Personal Injury	C	3	S	Wearing gloves is required for protection from sharps (needles, razor blades) and BBP (bloodborne pathogens) when picking up or transporting trash. Place needles, blades and BBP implements in a hard plastic sealable container. Do not reach into piles of trash without looking for sharp objects such as glass or needles. Be careful where you reach while picking up trash (bees nest, spiders, snakes, etc.). Use a picker for hard to reach areas. Report all cuts to supervisor, no matter the size. Get help when handling large items. Use proper lifting techniques. Watch out for sharp glass, jagged metal, etc.
Hazmat/drug labs/explosives	Exposure, unknown contaminants; chemical burns	C	3	S	METH by- products & related trash potentially could be in the area. Watch for inflated plastic bags, do not attempt to pick up; mark & notify County Sheriff. Be aware of small mobile methamphetamine cooking bottles. These can be identified as small “Gatorade” or Nalgene size bottles with

					 <p>unusual substances in them (see picture below). The collection and disposal of these requires a hazardous materials team. If hazardous wastes are found, flag area and report immediately to local law enforcement. Do not move chemical containers if you do not know contents. Be especially aware of possible drug lab paraphernalia, if in doubt notify your supervisor and law enforcement officer. Chemical waste should not be moved except by trained personnel. Any suspicious or unusual looking items leave in place, mark, and notify other workers and contact proper authorities.</p>
Hanta Virus	Inhalation	C	2	S	Be aware of mice droppings and dust generated from mice droppings. Wear gloves and breathing masks as necessary. Avoid handling items soiled with mice droppings, urine. Properly dispose of soiled items to prevent further exposure.
<i>The hazard analysis has been well designed and it will favorably change either physical conditions or personnel behavior during the conduct of this work activity. The risk has been assigned has the appropriate probability and severity and provides mitigation and contingency plans appropriate for the level of identified risk.</i>					
13. LINE OFFICER SIGNATURE		14. TITLE			15. DATE
/s/ Jim Pitts		District Ranger			04/25/2019

