

APPENDIX M
HERBICIDE SAFETY:
PERSONAL PROTECTION, HANDLING, SPILLS, JHAs

HERBICIDE SPILL PLAN

Pesticide spill prevention and clean-up, as well as storage, transport, and disposal procedures are covered in detail in *Forest Service Handbook (FSH) 2109.12 Pesticide Storage, Transportation, Spills, and Disposal*. Any herbicide projects would follow the direction given in this handbook. It is available for review at U.S. Forest Service offices.

A "Pesticide Spill Kit" for emergency spills should be available during operations (see the following Pesticide Spill Kit equipment list).

PESTICIDE SPILL KIT

The following equipment will be available with vehicles or pack animals used to transport pesticides and in the immediate vicinity of all spray operations.

- Emergency phone numbers
- Labels and MSDSs of all pesticides on hand
- Copy of the Spill Plan
- Personal Protective Equipment: rubber gloves, footwear, apron, goggles, face shield, respirator
- Heavy plastic bags for material storage
- 10 lbs. of absorbent materials (cat litter, vermiculite, paper, etc.) or the equivalent in absorbent pillows
- Shovel, broom, dustpan
- Heavy duty detergent, chlorine bleach, and water
- Sturdy plastic container that closes tightly and will hold the largest quantity of pesticide on hand
- First aid supplies
- Fresh water (at least 3 gallons; bring extra for wash-up after application)
- Soap (dish soap or hand soap)
- Towels
- Change of clothes
- Additional items required by labeling

Material Safety Data Sheets will be reviewed with all personnel involved in the handling of pesticides.

CLEAN UP OF PESTICIDE SPILLS

Minor Spills (less than 5 Gallons): Keep people away from spilled chemicals. Rope off the area and flag it to warn people. Do not leave unless someone is there to confine the spill and warn of the danger. If the pesticide was spilled on anyone, wash it off immediately.

Confine the spill. If it starts to spread, dike it up with sand and soil. Use absorbent material such as cat litter, absorbent pillows, soil, sawdust, or absorbent clay to soak up the spill. Shovel all contaminated material into a leak proof container for disposal. Dispose of it, as you would excess pesticides. Do not hose down the area, because this spreads the chemical. Always work carefully and do not hurry. Control access to the area until the spill is completely cleaned up. Notify the District Ranger and District Pesticide Coordinator of the minor spill.

Major Spills (Greater than 5 Gallons): The cleanup of a major spill may be too difficult for you to handle, or you may not be sure of what to do. In either case, keep people away, give first aid if needed, and confine the spill. Then call Chemtrec or the State pesticide authorities for assistance. Chemtrec stands for Chemical Transportation Emergency Center, a public service of the Manufacturing Chemicals Association with offices located in Washington D.C. Chemtrec provides immediate advice for those at the scene of emergencies. Chemtrec operates 24 hours a day, seven days a week, to receive calls for emergency assistance. For help in chemical emergencies involving spills, leaks, fire, or explosions, call toll-free **800-424-9300** day or night. This number is for **emergencies** only. Another number that is useful is EPA's National Response Center for Toxic Chemical and Oil Spills - 1-800-424-8802. Notify the District Ranger, District Pesticide Coordinator, and the Forest Pesticide Coordinator of any major spill.

If a major pesticide spill occurs on a highway, have someone call the highway patrol or the sheriff for help. (Carry these phone numbers with you.) Do not leave until responsible help arrives.

Decontamination: The small amount of herbicide remaining after the cleanup process on the road surface, storage area floor, or nonporous truck bed, must be decontaminated or neutralized. The decontaminating or neutralizing agent used will vary according to the nature of the spilled chemical. Soil, roadways, floors, and nonporous surfaces should be decontaminated in the following manner:

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Soil. Contaminated soil should be removed to a depth of at least 2 inches below the contaminated zone and placed in drums for disposal.

Roadways, Floors, and other Nonporous Surfaces. Reference the herbicide's MSDS for spill decontamination. Most herbicides used for weed control outlined in the current environment impact statement should not be treated with a specific chemical decontaminant.

For those pesticides that require a decontaminant, spread the appropriate decontamination material on the spill and work it into the surface using a coarse broom. Allow the decontaminant to sit for two hours.

NORTHERN REGION GUIDANCE

In addition the section from the Northern Region Emergency and Disaster Plan entitled "*Hazardous Materials Releases and Oil Spills*" will be reviewed with all appropriate personnel (see following pages). Notification and reporting requirements as outlined in this section will be followed in the unlikely event of a serious spill.

Hazardous Materials Releases and Oil Spills

(Excerpted from the Northern Region Emergency and Disaster Plan)

Definition: A hazardous materials emergency or oil spill is defined as any release or threat of release of a hazardous substance or petroleum product that presents an imminent and substantial risk of injury to health or the environment.

A release is defined as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injection, escaping, leaching, dumping or disposing into the environment.

Releases that do no constitute an immediate threat, occur entirely within the work place, are federally permitted, or are a routine pesticide application, are not considered to be an emergency and are not covered by this direction.

Responsibility: The first person who knows of a release and is capable of appreciating the significance of that release has the responsibility to report that release.

Only emergency release response and reporting is covered by this direction. Appropriated Regional Office staff specialists who should be notified directly of all non-emergency releases will accomplish who should be notified directly of all non-emergency releases will accomplish non-emergency reporting.

An emergency release of a hazardous substance or petroleum product may be from a Forest Service operation or facility; from an operation on National Forest land by a permit holder, contractor, or other third party; or from a transportation related vehicle, boat, pipeline, aircraft, etc., crossing over, on or under Forest Lands. Response and/or reporting by Forest Service employees will differ in each situation:

1. If the release is from a Forest Service facility or operation, the Forest Service and employee(s) is clearly the "person in charge", and is fully responsible for all reporting. Immediate response action is limited to that outlined in emergency plans and only to the extent that personal safety is not threatened.
2. If the release is from a third party operation, the Forest Service will only respond and/or report the emergency if the third party fails to take appropriate action.
3. If the release is from a transportation related incident, the Forest Service will only respond and/or report the emergency if the driver or other responsible party is unable or fails to take appropriate action.

Response Action Guide: the primary responsibility of any Forest Service employee(s) encountering a hazardous materials emergency or oil spill is completed and accurate reporting to appropriate authorities in a timely manner.

Forest Service employee(s) will not assume an incident command role for any hazardous materials emergency of spill, but may provide support services as directed by an authorized Federal On-Scene Coordinator (OSC) or other State or local authority.

Within the limits of personal safety, common sense, and recognition of the dangers associated with any hazardous materials emergency or spill, Forest Service employee(s) may provide necessary and immediate response action until an authorized OSC or other authority can take charge. These actions may include:

- Public warning and crowd control;
- Retrieval of appropriate information for reporting purposes.

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Additionally, and only after verification of the type of hazardous material involved and its associated hazards, a Forest Service employee(s) may also take actions including;

- Rescue of persons in imminent danger;
- Limited action to mitigate the consequences of the emergency.

Under no condition shall a Forest Service employee(s);

- Place themselves or others in imminent danger.
- Perform or direct actions that will incur liability for the Forest Service.

If there is any question that the emergency may constitute a threat to personal safety, limit your response to public warning and reporting or the incident.

Precautions: When approaching the scene of an accident involving cargo, or other unknown or suspected hazardous material emergency including oil spills:

- Approach incident from an upwind direction, if possible;
- Move and keep people away from the incident scene;
- Do not walk into or touch any spilled material;
- Avoid inhaling fumes, smoke, and vapors even if no hazardous materials are involved;
- Do not assume that gases or vapors are harmless because of lack of smell; and,
- Do not smoke, and remove all ignition sources.

ORGANIZATIONS FOR EMERGENCY AND TECHNICAL ASSISTANCE

- CHEMTREC – Chemical Transportation Emergency Center – 800-262-8200 (24 hours) (For assistance in any transportation emergency involving chemicals).
- Rocky Mountain Poison Control Center – 800-222-1222 (24 hours)
- National Agricultural Chemicals Association – 513-961-4300 (for pesticide technical assistance and information referral).
- Bureau of Explosives -905-953-8991 (For explosive technical assistance).
- Centers for Disease Control - 800-232-4636 (For technical assistance regarding etiologic agents).
- EPA Region 8 (MT, ND, SD) Emergency Response Branch 303-312-6385
- Montana Department of Health and Environmental Sciences (24 hours) 406-444-6911
- Montana Water Quality Bureau 406-444-6697
- South Dakota Water Quality Bureau 605-773-3754
- Montana Solid Waste Management Bureau 406-444-2821
- South Dakota Solid Waste Management Bureau: (605) 773-3153

TABLE M - 1. HAZARDOUS MATERIALS SPILLS CONTACT LIST AND IMMEDIATE ACTION GUIDE

RESPONSIBILITY	ACTION	CONTACT
Individual	<ul style="list-style-type: none"> • Do not expose yourself or others to any unknown materials. • Do not attempt rescue or mitigate until material has been identified, and hazards and precautions noted. Warn others and keep people away. Approach only from upwind. Do not walk in or touch material. Avoid inhaling fumes and vapors. Do not smoke and remove ignition sources. • Report the incident. Complete "Reporting Action Guide" within reasonable limits of exposure and timeliness, and report information to District/Forest Pesticide Coordinator • If there is any question that the incident is a threat to personal safety, limit response to public warnings and reporting. 	District Ranger and District/Forest Pesticide Coordinator
District Pesticide Coordinator	<ul style="list-style-type: none"> • Insure reporting individual is aware of hazards associated with incident. • Obtain as much information as possible, complete a copy of the Reporting Action Guide and relay all information to the Forest Pesticide Coordinator. • For fixed facilities, verify if possible, whether or not an emergency guide, Spill Prevention Control and Countermeasure Plan, or similar response plan is available for the specific emergency. If so, implement the response actions as indicated. • Dispatch additional help, communication systems, etc., to incident scene if incident is on National Forest land or is caused by Forest Service activity or facility. Otherwise support as requested by official in charge. • If there is any question that the incident is a threat to personal safety, limit response to public warning and reporting. • Immediately contact the Forest Pesticide Coordinator. 	Forest Pesticide Coordinator

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RESPONSIBILITY	ACTION	CONTACT
Forest	<ul style="list-style-type: none"> • Forest Pesticide Coordinator who will take the following actions: Determine if the incident is a true emergency. • Determine who the responsible party for the incident is, and whether appropriate actions and reporting have been accomplished. • From available information, determine hazards and precautions, if possible, and relay further instructions to reporting individual through the District. • Initiate appropriate local reporting actions, and coordinate responses with District. • Arrange Forest support for on-scene coordinator and/or local emergency response officials as requested. • Make appropriate local emergency contacts as directed by Forest Hazardous Materials Incident Coordinator. • Relay information from Forest Hazardous Materials Incident Coordinator back to District and up to Regional Office as appropriate. • Immediately contact the Regional Hazardous Materials Incident Coordinator. 	Forest Pesticide Coordinator will determine extent of emergency. If incident is determined reportable, contact: National Response Center; EPA Hazmat emergency response; Regional Hazardous Materials Coordinator; County sheriff and/or county disaster and emergency services coordinator; State Emergency and Disaster organizations; and Internal Forest Contacts
Regional Incident Hazardous Materials Incident Coordinator	<ul style="list-style-type: none"> • The Regional Hazardous Materials Incident Coordinator who will take the following actions: • Personally work with Forest Hazardous Materials Incident Coordinator to determine extent of the emergency. If incident is reportable, implement the following actions: By computer mailing list notify the Regional Forester, Deputy Regional Forester, Staff Directors and Attorney-in-charge (OGC); Contact other Regional Office (RO) specialists, other agency personnel, etc., as necessary to determine scope of problem and appropriate actions. RO specialist contacts include: Regional Watershed Coordinator (water); Regional Reclamation Officer (mining); Regional Safety and Health Program Manager; Regional Cooperative Forestry and Pest Management; Arrange Regional Support for on-scene coordinator and/or local emergency response officials as requested; Arrange a Regional Investigation/follow-up team if determined necessary; Keep Regional Forester, Staff Directors and OGC advised of situation via routine computer updates. 	Regional Hazardous Materials Incident Coordinator; Regional Emergency Coordinator; If incident is determined to be reportable, verify the National Response Center and appropriate Federal, State, and local contacts have been made; WO Engineering; WO Personnel Management.

Although reporting requirements vary depending on the type of incident, the responsibility of the employee(s) in the field is limited to collecting appropriate information and relaying it to the proper level of the organization in a timely manner. Following is a list of the information that should be collected, if possible; however, it is more important to maintain personal safety and report in a timely manner than to collect all information.

1. Date
 - Time of release/spill:
 - Time discovered:
 - Time reported:
 - Duration of release/spill:
2. Location (include state, county, route, milepost, etc.)
3. Chemical name:
 - Chemical identification number:
4. Known health risks:
5. Appropriate precautions if known:
6. Source and cause of release:
7. Estimate of quantity release (gallons):
 - Quantity reaching water (gallons):
 - Name of affected watercourse:
8. Number and type of injuries:
9. Potential future threat to health or environment:
10. Your Name:
 - Phone number for duration of emergency
 - Permanent phone number
11. For transportation related incidents, also report:
 - Name and address of carrier:
 - Railcar or truck number:

If there is any doubt whether an incident is a true emergency or whether reportable quantities of hazardous materials or petroleum products are involved, or whether a responsible party has already reported the incident, always report the incident.

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EXAMPLE JOB HAZARD ANALYSIS

FS-6700-7 (11/99)

U.S. Department of Agriculture Forest Service	1. WORK PROJECT/ACTIVITY Weed Spraying with Herbicides		2. LOCATION	3. UNIT
JOB HAZARD ANALYSIS (JHA)	4. NAME OF ANALYST		5. JOB TITLE	6. DATE PREPARED
7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE		
General herbicide use	Exposure/Contamination	Read the product label before each use and follow the directions		
Loading	Spill/contamination Back/muscle strains	Keep chemicals and related equipment in designated area of vehicle outside the passenger area. If bedliners are used, only use those made of non-porous material. Carry herbicide containers inside a catch basin. Make sure lids are on tight, containers upright & secure; use gloves when handling chemical containers. Read the Material Safety Data Sheets for herbicide used. Carry emergency containment equipment (shovel, kitty litter, plastic bags). If less than 5 gallons, then disperse widely. If more than 5 gallons, this is considered a hazardous material spill; notify dispatch and they will notify other officials. Use good lifting techniques: bent knees, close positioning, upright back.		
Mixing herbicides	Exposure/spills Synergism	Wear face shield or goggles, chemical resistant rubber gloves, long sleeves, pants, and chemical resistant rubber boots (use insoles to improve fit). Fill tank half way with water, add herbicide, then finish filling tank. Read Material Safety Data Sheets for specific herbicides. Use only recommended amounts. Close container immediately after use. Be Aware of the effects of Mixing chemicals. Read labels.		
Spraying herbicides	Exposure Trips/Falls	Wear personal protective equipment: goggles or glasses to protect eyes from drift; long sleeves; clean chemical resistant gloves to protect arms and hands; long pants and chemical resistant boots. Use unlined equipment because liners can carry residue. Wear disposable or washable coveralls as added protection against drift or spills. Wash or dispose of after each use. Avoid walking through treated areas. Think about hands: do not touch your face or food until hands are washed. Treat chemicals with respect. Don't get complacent. Do not spray if temperature is over 85 degrees Fahrenheit because of increased volatilization. Do not spray if winds are above about 10 miles per hour. Take extra time when walking with PPE on. Goggles and respirators can reduce your field of vision. Watch your footing and balance. A backpack sprayer can throw you off balance. Use insoles in rubber boots to improve fit.		
Clean-up	Contamination	After emptying sprayer tank fill with water and spray as if it were a herbicide to clean the equipment. Wash outside of sprayer with soap and water in the field. Wash all personal protective equipment in the field with soap, disperse solution on site. Return all equipment to proper storage area. Bathe or shower as soon as possible after spraying. Wash clothing separate from other laundry.		
Transporting to and from worksite	Vehicle accidents Chemical spills	Drive defensively, ensure vehicle is in proper running condition, use safety belts. Secure chemicals, backpack sprayers & slip-tank. Carry shovel and plastic bags to clean-up spills. If less than 5 gallons, then disperse widely. Otherwise, if more than 5 gallons, this is considered a hazardous material spill; notify dispatch and they will notify other officials.		
Spraying herbicide - slip-tank sprayer	Personal contamination	Check fittings and hose clamps for leaks before use; keep spray gun pointed in safe direction, store securely & relieve excess pressure when not in use. Wear all PPE: gloves, boots, safety glasses, coveralls.		
Spraying herbicide - backpack..	Personal contamination Slips/Falls	Keep wand pointed down at all times; wedge hand between handle and trigger when traversing rough terrain; check equipment for leaks before use; don't carry heavy loads in sprayer; wear all PPE. Working on rough terrain - look for firm footing; avoid area if too steep, tighten shoulder straps to prevent excessive tank movement.		
Spraying herbicide - ATV	Vehicle accidents Personal contamination	Travel at speeds less than 15 mph, and on slopes less than 10 %, the following PPE requirements are less stringent than for other uses of ATVs because of low speeds: wear an approved mountain bike helmet that protects your head but not cause overheating; wear rubber gloves and boots when spraying herbicides (avoid leather that absorbs chemicals); wear eye protection, long sleeved shirts and pants. When loading and unloading ATVs from trailers or pickup trucks use caution, beware of pinch points, keep ramps at low angle by using natural terrain features such as slope/ditches, watch for hidden obstacles when backing; make sure ATV is securely fastened when transporting (fasten to chassis to avoid influence of shock absorbers). If spray tank is loaded with liquid, the extra weight will change the ATVs center-of-gravity; never climb steep ramps or slopes. Inspect sprayer equipment prior to use, inspect fittings hoses and nozzles, replace if worn. Keep wand pointed down and be aware of wind direction when traveling.		
ATV travel between project areas	Vehicle accidents	When traveling at speeds greater than 15 mph, or on slopes less than 10%, wear a motorcycle helmet (three quarter or full) The helmet shall meet requirements of the Department of Transportation, ANSI or Snell Memorial Foundation standards. Also wear leather gloves, long pants and long sleeved shirt, appropriate foot wear, eye protection (such as goggles, glasses or face shield). Review sections 13.22 – to 13.24 in FSH 6709.11 Health and Safety Code Handbook.		
10. LINE OFFICER SIGNATURE		11. TITLE		12. DATE

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