CHAPTER 4
REGULATORY COMPLIANCE

Ski areas in Colorado and elsewhere in the U.S. are obligated to comply with numerous environmental regulations. Many regulations pertain to ski area land use and management on or near public lands; therefore, knowledge of and compliance with land use regulations are important. However, in keeping with the focus of this handbook on day-to-day on-mountain operations, this chapter focuses on five categories of environmental regulations: solid and hazardous waste management, pesticide use, underground and aboveground storage tanks, spill response and management, and other environmental programs. This chapter provides an overview of regulations in each category and sources of further information.

4.1 SOLID AND HAZARDOUS WASTE MANAGEMENT

The federal Resource Conservation and Recovery Act (RCRA) and its amendments gave the Environmental Protection Agency (EPA) the authority to control generation, transport, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for management of nonhazardous wastes. Under its state authorization program, EPA delegated the primary responsibility of implementing RCRA to Colorado and all other states except Iowa and Alaska. States can have different levels of authorization from EPA; for more information on state authorization, check www.epa.gov/epaoswer/hazwaste/state/authstat.html. Most states, including Colorado, administer a hazardous waste program that is equivalent to the federal requirements, but in some cases state requirements are more stringent.

This section provides information pertaining to solid waste, hazardous waste, used filter, universal waste, and used oil regulations. Although this section offers guidance that is more specific to Colorado, the information is generally applicable to ski areas in other states. Ski area environmental managers in other states should contact their state environmental agencies by telephone or the Internet to obtain additional, state-specific information. A directory of state hazardous waste programs can be found at:

- www.epa.gov/epaoswer/hazwaste/state/links.htm or
- www.epa.gov/epaoswer/osw/stateweb.htm

Alternatively, call the RCRA, Superfund, and Emergency Planning and Community Right-to-Know Act Call Center at (800) 424-9346.

In Colorado, consult the Colorado Department of Public Health and Environment (CDPHE) "Guide to Generator Requirements of the Colorado Hazardous Waste Regulations" and other documents at www.cdphe.state.co.us/hm/hmpubs.asp.

In Colorado, for more information on solid and hazardous waste regulations or on recycling solid and hazardous wastes, call the CDPHE Technical Assistance Line at (303) 692-3320.

RCRA and related state regulations provide specific definitions of solid waste and waste streams exempt from solid and hazardous waste regulation. Most regulatory definitions describe solid waste as any discarded materials, such as abandoned materials, recycled materials, and inherently waste-like materials. In practical terms, solid waste generated by ski areas includes all waste products that are disposed of or recycled, such as food waste, packaging, maintenance shop wastes, grounds maintenance wastes, and so on. Four specific types of solid waste are discussed in more detail below: hazardous waste, used filters, universal wastes, and used oil.

HAZARDOUS WASTE

According to RCRA, a waste must be classified as a solid waste before it can be considered a hazardous waste. Although there are some exemptions (see www.access.gpo.gov/nara/cfr/cfrhtml_00/Title_40/40cfr261_00.html (click on Part 261.4 Exclusions)), these exemptions rarely apply to ski areas; therefore, from a regulatory perspective, the liquid and solid wastes generated by ski operations are considered to be solid waste. Beware that sometimes states have more stringent regulations than federal regulations; a federal exemption does not necessarily imply a state exemption.

Any business that generates a solid waste is legally obligated to determine whether that waste is hazardous. A hazardous waste is determined by its presence on regulatory lists or by its physical or chemical characteristics. "Listed" hazardous wastes are specific wastes identified on four lists: the F-list (process-oriented), K-list (industry-specific), P-list (acutely toxic), and U-list (toxic). "Characteristic" hazardous wastes are those that are ignitable, corrosive, reactive, and/or toxic. For more information on listed and characteristic hazardous wastes, see www.epa.gov/epaoswer/general/orientat/rom31.pdf or contact the hazardous waste division of your state environmental agency. Potentially hazardous wastes often generated by ski areas include

- Spent cleaning solvents
- Waste solvent- or oil-based paints
- Rags contaminated with solvents, paints, or oils
- Aerosol cans that contain solvent compounds and that are not completely empty
- Waste engine coolant (antifreeze)
- Oil-water separator sludge

The determination that a waste is hazardous can be made in two ways: sample analysis and user knowledge. Sample analysis involves collecting a representative sample of the waste and sending the sample to a qualified laboratory for analysis to determine whether it tests positive for hazardous characteristics (ignitability, corrosivity, reactivity, and/or toxicity). User knowledge relies on the waste generator's knowledge of the materials used in a waste generating process to determine whether the waste is hazardous.

> ***Bottom Line:*** ***Ski areas are responsible for determining whether any solid waste generated by mountain operations is hazardous.***

EPA and state agencies generally classify ski areas as conditionally exempt small-quantity generators (CESQG) or small-quantity generators (SQG), both of which are defined below.

- CESQGs generate less than 220 pounds (about 27 gallons) of hazardous waste or less than 2.2 pounds of acutely hazardous waste per month and never store more than 2,200 pounds of hazardous waste on their property.

- SQGs generate between 220 and 2,200 pounds (about 270 gallons) of hazardous waste or 2.2 pounds of acutely hazardous waste per month and never store more than 13,200 pounds of hazardous waste on their property.

CESQGs and SQGs are required to determine whether the solid wastes that they generate are hazardous wastes, keep records of the determination rationale, and properly dispose of all hazardous wastes. However, unlike SQGs, CESQGs are exempt from many management and administrative requirements, including those that pertain to container management, storage time limits, filing for an EPA identification number, contingency plans, hazardous waste manifests, and others, although these management practices are recommended. For a summary of hazardous waste generator requirements, see www.cdphe.state.co.us/hm/GeneratorTable.PDF. This table was created by the CDPHE Hazardous Materials and Waste Management Division; however, requirements are similar in other states.

USED FILTERS

Many types of used filters can be generated by equipment at ski areas. Used motor oil filters should be recycled after one of the following operations is performed:

- Punctured through the dome or anti-drain back valve and then hot-drained (for 12 or more hours preferably at or near engine operating temperature but definitely above 60 °F)
- Hot-drained (with the same requirements as above) and crushed
- Dismantled and hot-drained (with the same requirements as above)

Filter Manufacturers Council

The Filter Manufacturers Council (FMC) has created a web site (www.filtercouncil.org) to promote proper used oil filter management and recycling. This web site contains used oil filter management procedures, descriptions of requirements in different states, and lists of filter recycling companies in different states. Questions can also be directed to FMC's hotline at (800) 993-4583.

Used oil filter management is relatively straightforward; however, this is not always the case for other types of used filters. Filters are used for various fluids (for example, fuels and coolants) that may contain contaminants, and these contaminants may accumulate on filter media at concentrations that render the used filters hazardous. For this reason, ski areas should document the sample analysis or user knowledge used to determine the proper disposal method for such filters.

UNIVERSAL WASTES

In 1995, EPA issued a final rule addressing how "universal wastes" should be managed. The Universal Waste Rule (see www.epa.gov/epaoswer/hazwaste/id/univwast.htm) defines the following wastes as universal wastes, which are subject to less stringent management than hazardous wastes:

- **Batteries** such as nickel-cadmium (Ni-Cd) and small, sealed, lead-acid batteries, which are found in many common items such as electronic equipment, mobile telephones, portable computers, and emergency backup lighting

- **Thermostats,** which can contain as much as 3 grams of liquid mercury and can be found in almost every building, including commercial, industrial, agricultural, community, and household buildings
- **Lamps,** which typically contain mercury and sometimes lead and are found in businesses and households. Examples of common types of lamps include fluorescent, high-intensity discharge, neon, mercury vapor, high-pressure sodium, and metal halide lamps.
- **Agricultural pesticides** that have been recalled or banned from use, are obsolete, have become damaged, or are no longer needed.

In Colorado, other wastes such as aerosol cans, electronic devices, and mercury-containing devices are considered to be universal wastes; for more information, see www.cdphe.state.co.us/hm/UWRgeneral.pdf or call the CDPHE Technical Assistance Line at (303) 692-3320. Because the definitions and requirements for universal wastes may vary from state to state, ski areas should consult the hazardous waste department or division of their state environmental agency for specific universal waste management practices. In general, universal waste management requirements are less restrictive and burdensome than hazardous waste management requirements to promote recycling rather than disposal of these wastes.

Because of the chemical characteristics of universal wastes, improper disposal of these wastes can negatively impact the environment.

Do not dispose of Ni-Cd batteries, pesticides, or any mercury-containing items (including many fluorescent lamps) with "regular trash."

CASE STUDY: FLUORESCENT LAMP RECYCLING AT ASPEN SKIING COMPANY (ASC) AND KEYSTONE

Many fluorescent lamps contain mercury, an environmentally persistent and bioaccumulating, toxic metal. Fluorescent lamps disposed of in landfills introduces a possibility of mercury leaching into soils and groundwater, or requiring treatment if leachate is collected. For this reason, in1999 ASC voluntarily began recycling its fluorescent lamps. In 2 years, ASC collected and recycled over 700 lamps.

In 2000, Keystone began a fluorescent lamp collection and recycling program. Used fluorescent lamps are collected at Keystone's new centralized waste management area for pick up by a recycling company (Superior Special Services). Keystone has diverted over 2,000 fluorescent lamps from landfills.

USED OIL

Ski areas commonly generate used oil in conjunction with vehicle, lift, snowcat, snowmobile, and groundskeeping equipment maintenance operations. CDPHE regulations indicate that used oil generators are responsible for maintaining the condition and integrity, proper labeling, and storage of all used oil containers and for responding to releases. EPA presumes that used oil is recycled unless the used oil handler properly disposes of it or sends it to a regulated disposal facility.

For more information, visit the CDPHE solid waste and hazardous waste regulation web site at www.cdphe.state.co.us/op/solidwastehazmatregs.asp. Ski areas outside Colorado should visit www.epa.gov/epaoswer/hazwaste/usedoil/index.htm and contact their state solid and hazardous waste management programs.

4.2 PESTICIDE USE

The EPA Office of Pesticide Programs (OPP) (see www.epa.gov/pesticides) and various state agencies (in Colorado, the Colorado Department of Agriculture [CDA] Division of Plant Industry [see www.ag.state.co.us/dpi/]) register pesticides, designate restricted-use pesticides, and regulate pesticide applicator certification. State pesticide programs may also regulate fertilizer and pesticide storage, mixing, and loading areas.

Contact information for the pesticide regulatory agency in your state can be found at:

www.ace.orst.edu/info/nptn/state1.htm

Restricted-use pesticides are controlled because of their toxicity and harmful effects on human health and the environment. An individual who intends to apply restricted-use pesticides must first receive training and appropriate certification. Although their use is increasingly rare, ski areas with golf courses may apply some restricted-use pesticides. According to Golf Course Superintendent's Association (GCSA) and EPA OPP, the following state and federal restricted-use pesticides have been used by golf courses:

Colorado*	**Federal***	
Bromacil	Atrazine	Lindane
Diuron	Chlorpyrifos	Pronamide
	Chlorothalonil	Simazine
	Diazinon	

***Note:** Contact the pesticide regulatory agency in your state for a list of restricted-use pesticides, and visit www.epa.gov/RestProd/ for a complete list of federal restricted-use pesticides.

4.3 UNDERGROUND AND ABOVEGROUND STORAGE TANKS

Most ski areas own storage tanks for fuel and oil used by vehicles and lifts. EPA and state agencies enforce regulations governing installation and safe operation of aboveground and underground petroleum storage tank facilities as well as remediation of petroleum contamination when it is discovered.

An underground storage tank (UST) system is a tank and any underground piping connected to the tank that have at least 10 percent of their combined volume underground. EPA UST regulations apply only to underground tanks and piping storing either petroleum or certain hazardous substances. In response to growing awareness of soil and groundwater contamination from leaking USTs, Congress directed EPA to publish regulations that would require owners and operators of new tanks and tanks already in the ground to prevent, detect, and clean up releases. In turn, EPA created a process by which states can administer approved UST programs that are equivalent to or more stringent than the federal program. EPA's UST program web site is www.epa.gov/swerust1/index.htm. For a list of state UST program contacts, see www.epa.gov/swerust1/states/statcon1.htm. In Colorado, the Division of Oil and Public Safety (see http://oil.cdle.state.co.us) enforces regulations governing installation and safe operation of USTs and aboveground storage tanks (AST).

ASTs must meet EPA's spill prevention, control, and countermeasure (SPCC) requirements (see www.epa.gov/oilspill/spcc/index.htm). SPCC requirements apply to a facility having a single AST with a storage capacity greater than 660 gallons or multiple ASTs with a combined capacity greater than 1,320 gallons. SPCC requires procedural and contingency plans and has various technical requirements such as corrosion protection. At a minimum, most ASTs need to meet state and local fire codes, which usually have some mix of construction, installation, operation, and maintenance requirements that are intended to prevent fires and other hazards associated with mismanaged or substandard ASTs.

As a strategy to eliminate environmental risks and compliance obligations, Breckenridge Ski Area in Colorado eliminated the use of USTs and fitted all lift auxiliary generators with low volume ASTs. ASTs are re-fueled as needed by snowcat.

The Steel Tank Institute (STI) maintains a web site (www.steeltank.com) that includes information about AST and UST regulations, training, state program contacts, and tank selection and management.

4.4 SPILL REPORTING AND RESPONSE

EPA requires that the person or organization responsible for a release or spill notify the federal government when the amount reaches a federally-determined limit. EPA has established reporting triggers or "reportable quantities" (RQ) for both hazardous substance releases and oil spills to identify when the federal government should be notified. States also may have separate reporting requirements. EPA's Emergency Response Program web site contains further information about spill reporting and response (see www.epa.gov/superfund/programs/er/index.htm).

If a hazardous substance is released to the environment in an amount that equals or exceeds its RQ, the release must be reported to federal authorities so that emergency response personnel can evaluate whether a response action is needed. The RQ value is not the only factor used to determine whether federal notification requirements apply. Certain types of releases do not need to be reported if an RQ or more is released and others don't have to be reported at all. The reporting exemption most likely applicable to ski areas is "Any release that results in exposure to persons solely within a workplace" (see www.epa.gov/superfund/programs/er/triggers/haztrigs/hazexems.htm).

Furthermore, reporting requirements and RQs often vary from state to state, and sometimes within states. To determine what must be reported and to whom, ski areas should contact their state emergency response commission (SERC) and local emergency planning committee (LEPC). A contact list for all state SERCs can be found at www.epa.gov/superfund/programs/er/index.htm.

In Colorado, spills to land larger than 25 gallons must at least be reported to the CDPHE Hazardous Materials and Waste Management Division and the local agency. Any spill that enters a waterway, independent of size must be reported to the same agencies. Spills smaller than 25 gallons should be reported to the LEPC. Remember, specifics regarding what to report and who to report to depend on the ski area location. For Colorado ski areas, a fact sheet summarizing spill reporting is at: www.cdphe.state.co.us/emp/SPILLS%20AND%20RELEASES.htm

Be Prepared!
If a spill occurs know when and what agency must be notified. Contact your SERC or LERC for these details.

4.5 ENVIRONMENTAL REGULATIONS

Other types of environmental regulations may apply to some on-mountain operations performed under unusual circumstances. These regulations are discussed below.

AIR EMISSION CONTROL REGULATIONS

In most cases, on-mountain operations at a typical ski area would not be covered by air pollution control regulations. However, some air emission regulations vary widely from state to state, and even within states, depending on air quality, topography, population, and local weather. Therefore, ski areas should review their operations against local requirements. Possible ski area operations that could be regulated include open burning, on-site electricity generation (for example, non-emergency operation of diesel generators), large-scale burning of garbage or other fuels like wood or coal for heat and/or electricity, and dust control during construction and road sanding. Contact information for air pollution control agencies in Colorado and other states can be obtained at www.epa.gov/air/partners.html#state.

WATER QUALITY REGULATIONS

Sustainable Slopes, the NSAA Environmental Charter, identifies water as an important resource for ski areas as well as the surrounding natural environment. The charter calls for ski areas to meet or exceed water quality regulations that pertain to ski area operations and to manage wastewater in a responsible manner.

The Clean Water Act is the foundation of water quality protection in America. Regulations implementing this law vary widely from state to state and locality to locality. These variations depend on the type of wastewater discharged (for example, sanitary versus storm water), the volume discharged, where it is discharged to (for example, small stream, big river, lake, or groundwater), and the downstream use of the water (for example, drinking water, fishing, or swimming).

Many wastewater discharges require a permit from a state or local agency. Almost all discharges require certain treatment standards or permit limits be met before discharge. Typical ski area discharges that are commonly regulated include sanitary sewer, septic systems, storm water, and oil/water separators. Drinking water systems and public swimming pools often have water quality standards to meet as well.

For more information on water quality regulations, see the links below:

http://www.epa.gov/ebtpages/water.html

http://www.epa.gov/ow/states.html

http://www.cdphe.state.co.us/wq/wqhom.asp

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW (SARA TITLE III) REGULATIONS

Under SARA Title III (EPCRA), a Tier II Hazardous Chemical Inventory Report is required for every year an EPA threshold planning quantity (TPQ) is exceeded. Ski areas potentially could exceed the 10,000-pound TPQ for gasoline and diesel fuels and possibly other chemicals. Tier II reports for these

inventories would then be required. These reports are required to be submitted to the SERC (see Section 4.4), LERC, and the local fire department.

If applicable, the Tier II report is due on March 1 of the following calendar year (for example, calendar year 2001 reporting is due March 1, 2002). If a new chemical exceeds a TPQ or if significant new information is determined about the chemicals at a facility, a Tier II (or Tier I) report should be filed to organizations listed above within 90 days.

TPQ's for Extremely Hazardous Substances (EHS), as defined by SARA, are provided in the EPA Title III List of Lists. The TPQ for all EHSs is either the TPQ listed or 500 pounds, whichever is lower. For any chemical that is not an EHS, but is a Hazardous Chemical under the federal Occupational Safety and Health Administration regulations, and therefore requires the preparation and availability of a Material Safety Data Sheet (MSDS), the TPQ is 10,000 pounds.

For more information on SARA reporting, see the links below:

http://www.epa.gov/swercepp/ep-epre.htm#311-312

http://www.cdphe.state.co.us/ic/ecac/sara/tieriireports.html

CASE STUDY: VAIL RESORTS PERFORMS A VOLUNTARY, COMPREHENSIVE COMPLIANCE SELF AUDIT

To assure its goal of meeting or exceeding environmental regulatory compliance, Vail Resorts conducted third-party compliance audits during summer and fall of 2001 at Keystone, Breckenridge, Vail, Beaver Creek, and the Grand Teton Lodging Company. The compliance audit and follow-up activities included the following:

1. **Establish Audit Scope** to address compliance with the Clean Air Act, Clean Water Act, Resource Conservation and Recovery Act (hazardous waste), Emergency Planning and Community Right to Know Act, Toxic Substance Control Act (PCBs), and Occupational Safety and Health Act (hazardous materials management).

2. **Select Third-Party Auditor** based on competitive bids from four established firms invited to submit proposals; selected consultant based on experience, method, and price.

3. **Form Internal Compliance Teams** at each resort that included staff from vehicle shops, lift maintenance, paint shops, snowmaking, restaurants, facility maintenance, hotels, and golf courses. Team members answered pre-audit information requests, participated in an opening conference, and hosted the site inspections and interviews.

4. **Organize Audit Findings**, or issues, prioritized as minor and major compliance issues, or "best management" issues that are not regulated but lead to better environmental performance; star performers and areas of best practices were also identified.

5. **Submit Audit Results** for review and comments, then present results in a final report to the Vail Resorts executive committee and each ski area's senior staff. Consultants provided written reports and a database of findings to help manage follow up actions. The database is posted for shared access and updates by resort teams.

6. **Designate Follow-up Responsibility** to a member of each resort's compliance team to update the actions recommended in the database and to manage filing and communication among the team. Teams meet periodically to update results and share progress.

7. **Hold Monthly Internal Audits** help identify issues, maintain consistency, and share best practices.