

**Arkansas Medical Marijuana Cultivation Program Development:**  
**Environmental/Safety Issues**

Arkansans recent passage of the Arkansas Medical Marijuana Amendment of 2016 set in motion fast-paced efforts to promulgate rules for cultivation, processing and dispensing of marijuana for medicinal related consumption.

The Arkansas Medical Marijuana Commission (“AMMC”) must develop both facility structural and operational standards for marijuana cultivating, processing and dispensing activities.

Facility security, financial capability, quality control, product consistency, packaging, transportation, labeling and related issues have been to date the primary focus of the AMMC in its development of the medical marijuana program.

The AMMC and the two Arkansas agencies with jurisdictional oversight (Alcohol Beverage Control Administration and Arkansas Department of Health) will likely continue to concentrate on these areas of interest in the development and/or the eventual enforcement of the Arkansas Medical Marijuana program regulations.

Nevertheless, a number of other operational aspects of medical marijuana facilities will need to be considered by both facility owners and the regulatory agencies. For example, cultivation/processing facility owners would be well advised to take into account the significant amounts of energy such operations can consume. The potential energy issues associated with marijuana cultivation were analyzed in a recent article posted on this blog titled:

*Arkansas Marijuana Legalization: Are there Energy Implications?*

<http://www.mitchellwilliamsllaw.com/arkansas-marijuana-legalization-are-there-energy-implications>

An equally important aspect of these operations that should be considered are the potential environmental and safety issues and regulatory requirements. This is arguably particularly true in the case of marijuana cultivation, grow and processing operations. The potential environmental effects of marijuana production are typical of similar horticultural or agricultural facilities. However, these are clearly material issues for cultivation/grow facilities that will require investment in terms of both thought and expense. Note that these issues may not be as important for dispensaries since the product is more likely to be already packaged or handled in ways that minimize the potential for releases to air or water.

In summary, while environmental and safety considerations are not necessarily a predominant consideration in the development of medical marijuana cultivation processing infrastructure, they are still worthy of attention and policy design.

The attached paper addresses:

- Environmental/safety issues potentially associated with cultivation/processing operations;
- Examples of environmental/safety regulatory requirements applied to cultivation/processing facilities by certain federal/state/local governments

- Examples of Arkansas environmental/safety authorities/regulatory requirements potentially applicable to Arkansas cultivation/processing facilities

I. Environmental and safety issues potentially associated with cultivation/processing operations

The operation of various agricultural cultivation and/or processing operations generate differing amounts of wastes, wastewater, emissions and byproducts. Such facilities are of course required to comply with applicable federal, Arkansas, or local environmental requirements.

A marijuana cultivation or processing operation will presumably be subject to similar requirements. The various wastes, substances or wastewaters will have to be appropriately handled or disposed of as both a matter of good practice or to comply with applicable laws.

Marijuana's unique status, however, may result in additional requirements being superimposed on wastes, wastewaters or other materials derived from marijuana cultivation or processing. For example, cultivation/processing operations may generate waste byproducts containing regulated substances. This may prohibit them from being disposed of like common commercial or industrial waste.

Additional issues could involve the use and storage of certain chemicals such as solvents, pesticides, herbicides (weed control), insecticides, or fungicides. Some of these chemicals pose personal safety and fire risks that must be addressed. Likewise, the ability to discharge chemicals used in extraction processes into a sewage treatment plant may be circumscribed.

Odors and emissions may also need to be identified and addressed.

A more detailed list of potential environmental/safety issues associated with cultivation and processing facilities might include:

A. Wastewater/Stormwater

1. Wastewater or stormwater associated with cleaning, rinsing, extraction, manufacturing or irrigation (hydroponic or otherwise).
  - a. Discharges may be channeled to adjacent waterbodies, sewer drains or private or public owned treatment works.
  - b. Wastewaters or stormwater may have significant nutrient (phosphates and nitrates), pesticide, or other pollutant loadings that are relevant to a receiving stream or wastewater utility's water quality, respectively.

B. Wastes/Discarded Materials/Recyclables

1. Crop residues, extracts failing quality testing, vegetative material (stalks, stems, roots, leaves, etc.), planting soils, wastes, etc. generated by processing, composting, mixing, disposal or recycling marijuana cultivation/production related materials.
2. Fats, oils, and grease (associated with production of edible products)
3. Potential Solid Wastes/Recyclables
  - a. High-intensity bulbs may not be recyclable and must be properly managed
  - b. Facility trash
  - c. Recyclables such as packaging, containers, etc.
4. Potential Hazardous Wastes
  - a. Pressurized gas cylinders
  - b. Solvents
  - c. Used mercury containing lamps waste
  - d. Discarded/out-of-date pesticides/fungicides/insecticides

C. Air

1. Odors potentially generated by cultivation, production and processing operations (released through exhaust systems or open doors)
2. Emissions associated with chemicals utilized for intensive extractions and infusions of marijuana products
3. Boiler/heating unit emissions
4. Flammable vapors

D. Product/Chemical Storage/Use

1. Petroleum Product Storage Tank Storage for Generators and other Purposes
  - a. Diesel generators
  - b. CO<sub>2</sub> generators fueled by propane or natural gas
2. Chemicals/Fertilizers/Fungicides/Insecticides/Pesticide Storage
3. Propane/Butane Tank Storage
  - a. Power/energy
  - b. Use as solvents in extraction process
4. Hash oils
5. Sulfur burners
6. Fire/Explosion/Asphyxiation Hazards
  - a. Carbon Monoxide
  - b. Liquefied Petroleum Extraction
  - c. Alcohol Extraction

E. Noise

II. Examples of Environmental/Safety Regulatory Requirements Applied to Cultivation/Processing Facilities by the Federal/State/Local Governments

A. Marijuana Specific Requirements

1. Several states (an example is Michigan) address destruction or disposal
  - a. Methods for destruction/disposal may be prescribed
  - b. Requirements for destruction or disposal may vary depending on the defined category that encompasses a particular waste
  - c. Requirements for tracking for medical marijuana waste through disposal (including weighing and recordkeeping)
2. Alaska (3 AAC 306.740)

Marijuana waste disposal includes requirements for making it unusable by grinding prior to delivery to a landfill.

### 3. California Authorities

#### a. California Medical Marijuana Regulatory and Safety Act

- i. One of the statute's purposes includes addressing potential environmental issues associated with cultivation
- ii. Requires California agencies to address cultivation environmental issues (including coordination with cities/counties in environmental enforcement efforts).
- iii. Directs the California Department of Pesticide (coordinating with the California Water Board) to issue regulations addressing pesticide application/pest control associated with cultivation requirements

#### b. California Water Code

- i. Requires development of state regulations to address discharges of waste resulting from cultivation

### 4. Washington (State) 34-55-097 Marijuana Waste Disposal (Liquids and Solids)

#### a. General Requirements

- i. Certain marijuana wastes are required to be ground up, incorporated into other wastes or otherwise made unusable (Colorado imposes similar requirements)
- ii. Notices are required to be made to the Washington State Liquor and Cannabis Board before disposal in a permitted facility

#### b. Wastes that must be evaluated against Washington Dangerous Waste (state analog to Resource Conservation and Recovery Act "hazardous wastes") include:

- i. Waste from marijuana flowers, trim and solid plant material used to create an extract (per WAC 314-55-104).
- ii. Waste solvents used in the marijuana process (per WAC 314-55-104)
- iii. Discarded plant waste, spent solvents and laboratory wastes from any marijuana processing or quality assurance testing.
- iv. Marijuana extract that fails to meet quality testing.

### 5. Colorado

- a. Rule 12.200 provides the Medical Marijuana Enforcement Division the authority to impose requirements for the disposal of medical marijuana waste

- b. Marijuana waste must be made unusable and unrecognizable prior to leaving the licensed premises
  - c. Post-harvest waste materials must be identified, weighed and tracked until disposed of.
  - d. Grinding and incorporating marijuana waste with non-consumable, solid wastes which include certain listed wastes such that the resulting mixture is at least fifty percent non-marijuana waste
  - e. Rendered solid waste must be:
    - i. Disposed at a solid waste site with Certificate of Designation from a local governing body
    - ii. Deposited at a compost facility that has a Certificate of Designation from the Colorado Department of Health and Environment
    - iii. Composted onsite at a facility owned by the generator of the waste and operated in compliance with the regulations pertaining to solid waste sites and facilities
  - f. Colorado Department of Agriculture Pesticide/Labeling Requirements
6. Deschutes County, Oregon Noise Control Standards (DCC8.08)
7. Las Vegas Municipal Code 8.95.190 Medical marijuana waste made unusable prior to leaving a facility and a manifest utilized
- B. Potentially Applicable Environmental/Safety Regulatory Requirements Not Specific to Marijuana
- 1. Pesticides/Fungicides/Insecticides/Herbicides Restrictions
    - a. Utilized in various stages of cultivation and processing
    - b. Labeling/use restrictions/requirements
      - i. Federal Insecticide Fungicide Rodenticide Act (“FIFRA”)
      - ii. States Implementing/Enforcing FIFRA regulations
  - 2. State Air Requirements
    - a. Permitting
      - i. Potential Emission Sources
        - A. Boilers/Generators/Heating Units

B. Processing/Use of Solvents for Extraction (volatile organic compounds)

- b. Odor Requirements
  - i. Oregon Department of Environmental Quality Nuisance Odor Strategy
  - ii. Boulder, Colorado Ventilation Requirements
- 3. Solid Waste Management Requirements
  - a. Restrictions on availability of composting for marijuana-related solid waste such as vegetative material and used plant growth soil
  - b. Restrictions on availability of landfills, transfer facilities, or transport for marijuana-related waste
- 4. Hazardous Waste Management Requirements
  - a. Marijuana processing and cultivation activities can generate hazardous wastes (discarded solvents, chemicals, etc.) triggering Resource Conservation and Recovery Act ("RCRA") Subtitle C (or state equivalent) requirements
- 5. State Wastewater Requirements
  - a. Clean Water Act/National Pollution Discharge Elimination System permits for direct discharges from cultivation/processing structures into waterbodies
  - b. Clean Water Act/Pretreatment Requirements imposed on cultivation/processing structures discharging into municipal wastewater treatment plants
- 6. Fire Codes
  - a. National Fire Protection Association
    - i. National Fire Protection Association ("NFPA") task group developing specific Chapter for cultivation/processing facilities
    - ii. NFPA draft report issued in Fall 2016 titled "Marijuana, Growing, Processing and Extraction Facilities"
    - iii. NFPA 58 (Liquefied petroleum gas)
  - b. State Fire Codes
  - c. Local Fire Codes

- i. Denver, Colorado (Marijuana specific Chapter)
  - 7. Occupational Safety and Health Administration Standards
    - a. Personal protective equipment/respirators/fit test
    - b. Electrical/wiring
    - c. Hazardous communication
      - i. Labeling/containers
      - ii. Material Safety Data Sheets
      - iii. Hazardous chemical training (exposure)
    - d. Exits/fire extinguishers
    - e. Proper management of combustible materials
    - f. Ventilation
    - g. Noise
    - h. CO<sub>2</sub> exposure
    - i. Pinching/cutting/rotating hazards
- III. Examples of Arkansas Environmental/Safety Regulatory Requirements Potentially Applicable to Cultivation/Processing Facilities
  - A. Arkansas Plant Board/FIFRA Regulations
    - 1. Arkansas agency delegated responsibility for implementation/enforcement of FIFRA
    - 2. Plant Board regulates fungicides, herbicides, pesticides and insecticides
  - B. Wastewater
    - 1. Arkansas Department of Environmental Quality implementation/enforcement of Clean Water Act NPDES permitting requirements applicable to facility wastewater discharges into waters of the United States/State
    - 2. Arkansas municipalities (Little Rock, etc.)/Clean Water Act pretreatment requirements applicable to wastewater discharges to municipal wastewater treatment plants

C. Air Emissions

1. Arkansas Air Code/Arkansas Pollution Control & Ecology Commission Regulation 18
2. Arkansas Municipal Codes addressing nuisances, odors, etc.

D. Hazardous Wastes

1. Arkansas Department of Environmental Quality implements/enforces RCRA Subtitle C hazardous waste regulations
2. Arkansas Pollution Control & Ecology Commission Regulation 23 (state analog to RCRA)

E. Solid Wastes

1. Arkansas Department of Environmental Quality implementation/enforcement of non-RCRA waste requirements
2. Arkansas Solid Waste Management Code/Arkansas Pollution Control & Ecology Commission Regulation 22

F. Fire Codes

1. Arkansas Fire Code
  - a. Development/implementation by Arkansas Fire Marshall (Unit of Arkansas State Police)
2. Local Fire Codes

G. Arkansas Department of Labor (Safety)

H. Arkansas Medical Marijuana Amendment of 2016

The Medical Marijuana Commission and two other Arkansas agencies (Department of Health/ABC) are likely to develop medical marijuana specific requirements for certain potential environmental and safety issues related to cultivation and processing.