



April 4, 2018

Mr. Mark Setterland
Chief Building Official
City of Santa Rosa, Building Division
100 Santa Rosa Avenue
Santa Rosa, CA 95404

**Subject: Cannabis Dispensary Conditional Use Application
353 College Ave., Santa Rosa, CA
Cannabis Odor Mitigation Plan**

Dear Mr. Setterland,

Introduction

A combination of engineering and administrative controls is proposed to effectively mitigate cannabis odors. Engineering controls include carbon filtration via a dedicated environmental exhaust fan; and negatively pressurizing odor sources. Carbon filtration is commonly accepted throughout the cannabis industry as the current best engineering control technology for mitigating odors in facilities generating marijuana odors with exhaust air/filter intake points located in areas of the facility where odor-generating activities take place. As such, this engineering control strategy will effectively mitigate odors for all cannabis odor sources within the facility.

Design Considerations

Carbon filtration odor removal effectiveness depends on three criteria:

1. Exhaust air contact time
2. Filter cleanliness
3. Negative room pressurization

Contact time is a function of air velocity through the filter and should be designed to maintain a minimum contact time of 0.2 seconds, or as specified by the manufacturer. Filter cleanliness can be quantified by monitoring system pressure drop across the filter and should not exceed a manufacturer's published performance rating for a given filter. Areas of high odor concentration are typically negatively pressurized to allow for the control of odors through carbon filter(s).

Retail facility cannabis odor is most likely to be present in secure storage/vault rooms [essentially stock rooms] where packaged products are more densely stored. Retail sales areas, although displaying packaged products for sale, have lower product densities [products per square foot of floor area] and therefore are less likely to be a significant source of cannabis odors.

System Design

The following summarizes the administrative and engineering controls proposed to mitigate cannabis odors:

1. Administrative Controls
 - A. Standard operating procedures will require routine monitoring of carbon filter differential static pressure.
 - B. Filter replacement will be required any time monitoring yields unacceptable pressure monitoring results.
 - C. Monitoring results and filter replacement dates will be documented in an odor control log available to a building inspector in the event of a complaint or routine inspection.
2. Engineering Controls

WARNER MECHANICAL ENGINEERING, INC.

JEFF WARNER, PE | EMAIL: jwarner@wme-consulting.com | PHONE: 707-322-0676



- A. Carbon filter(s) and environmental exhaust fan(s) will be specified to maintain an acceptable contact time.
- B. Carbon filter(s) exhaust air inlet(s) will be located in storage room(s), creating a negative pressure in this space.
- C. Intermittently operated environmental exhaust fans (break room, rest room, etc.) will not be filtered.
- D. Exhaust fan make-up air will be via mandatory ventilation air at space conditioning equipment.
- E. Exhaust fan and space conditioning equipment shall be required to operate continuously during occupied hours.
- F. System testing and balancing will be required of the installing contractor.
- G. Contractor shall provide a test and balance report to the owner including: initial system pressure drop; outdoor air rates at space conditioning equipment; and environmental exhaust rates.
- H. Installing contractor shall provide written monitoring instructions and provide operational training to the owner upon placing the system in service.

Summary

It is worth noting the Denver Department of Environmental Health has found that most marijuana related odor complaints arise from grow facilities rather than dispensary/retail facilities. Based on this finding we feel the odor control mitigation plan presented here exceeds what one might expect for a retail facility. This plan is consistent with accepted and best available cannabis-industry-specific technologies designed to mitigate cannabis odors.

I am available to discuss this plan at your convenience.

Sincerely,

Jeff Warner, PE
Warner Mechanical Engineering, Inc.
CEO, Principal Engineer
CA No: M32903