

Odor Concerns Related to Outdoor Marijuana Cultivation Operations

To: Plainfield Zoning Board of Appeals, c/o Peg Keller
FROM: Briony Angus, AICP; Brian Huntley, P.E., Sarah Adams, AICP
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Tighe & Bond has been retained by the Town of Plainfield to provide Peer Review Services to the Zoning Board of Appeals (ZBA) in its review of the Special Permit Application for the proposed construction of a cannabis cultivation facility at 27 Broom Street, Plainfield (the Project) from 27 Broom Street LLC (the Applicant).

As described in the application, the Project is proposed to include an approximately 16,000 square foot building with on-site parking, stormwater management, a septic system, an outdoor grow area, and other site amenities. The proposed building is one-story and includes a processing area and four greenhouses. The outdoor grow area will occupy approximately 3 acres.

After our initial review of application materials, we note that that the Applicant is not proposing any odor control mitigation for the outdoor grow area. At the request of the ZBA, Tighe & Bond has conducted research on what other geographies have done to mitigate and/or regulate odors from outdoor cultivation facilities. This memorandum includes a brief summary of complaints, regulations, and possible odor control provisions. Please note, this memorandum has been prepared to address odor concerns related only to the outdoor cultivation.

Odor Concerns

While the permitting and concerns associated with the legalization of marijuana are new to Massachusetts, states like California, Colorado, Oregon and Washington have been navigating facility siting concerns, addressing abutter odor complaints, and refining regulations based on lessons learned for a number of years. However, the collective experience of these states with outdoor cultivation facilities does not provide clear guidance regarding outdoor odor for states just starting to permit similar facilities.

In California, Fresno, San Jose, San Diego, Sacramento, Modesto, San Luis Obispo, Clovis, Visalia, Tulare, and Merced all prohibit outdoor growing, as do many other municipalities including the whole of Fresno County. Aside from the City of Napa (which voted to allow six plants to be grown outside for personal use earlier in 2018), no other Napa county municipalities have moved to allow any outdoor growth. Santa Barbara County has received more permits to grow marijuana than any other county in California. As a result, residents of the Town of Carpinteria say they have resorted to stuffing pillows under their doors to combat odors from nearby grow facilities¹.

Some communities (such as Denver, CO) have set odor standards for marijuana and other odiferous industries, but for the most part, California cities and counties rely on repeated complaints as evidence of a problem.

¹ <http://www.thecannifornian.com/cannabis-business/marijuana-stinks-heres-cities-businesses-neighbors-can/>

In 2015 in Colorado, owners of a residential property sued a marijuana producer over anticipated cannabis-related odors, citing racketeering laws since marijuana remains illegal under federal law. While initially dismissed in federal district court, the case moved forward in appeals court in 2017, paving the way for more lawsuits raising racketeering charges, and citing odor and other nuisance concerns². In the Colorado case, a federal jury ruled in favor of the cannabis cultivation facility owner³. A similar suit was filed in Massachusetts. Cambridge neighbors to the medical marijuana dispensary Healthy Pharms sued the dispensary in federal court in 2018, arguing that federal law, under which marijuana is illegal, should pre-empt the state law which allows it. The complaint states the neighbors' properties will lose \$27 million in value due to Healthy Pharms' operations, and that "extensive evidence shows that marijuana retail sale is an odorous and stigmatized activity and that foul smelling, stigmatized activities reduce nearby property values."⁴ A federal judge recently issued a motion to dismiss the suit, however allowed the Plaintiff the opportunity to amend their complaint.

Spokane County, WA had sufficient trouble with odors from outdoor grows that officials instituted a temporary ban late in 2016 on new outdoor marijuana farms, citing the increasing number of complaints to the Spokane Regional Clean Air Agency. That ban was replaced by a rigorous permitting process that is more restrictive than the zoning rules the county had in place before the ban (more information on the Spokane County zoning rules is provided below).

Complaints from certain residents in all of the communities cited above include claims that the odor associated with marijuana plants, particularly during the harvest, disrupts quality of life, lowers property values, and causes problems for people with respiratory issues such as asthma.

Odor Control Technologies

Odor control for indoor grow operations is fairly straightforward. Charcoal filters are typically utilized to absorb the scent, and release air that is free of the skunky smell that many neighbors complain of. These systems channel air into an exhaust fan, so that all the air is filtered before leaving the building. An outdoor farm cannot apply the same type of system as it is not possible to contain or control the flow of air. The use of potent smelling plants like lilacs or roses is also ineffective, as they fail to neutralize marijuana odors.

Fog systems are considered a viable odor control solution for outdoor grow facilities.⁵ These types of systems involve placing nozzles at the spot where air from a grow operation will be expelled (i.e. at the fence-line or property line). The system mixes water with an odor-neutralizing chemical and forces that mixture through the nozzles at high pressure. The water instantly evaporates, leaving the chemical in the air to attract and neutralize any odor from the marijuana plant, effectively building a barrier of fog between the odors and the surrounding community.

² <http://www.thecannifornian.com/cannabis-business/marijuana-stinks-heres-cities-businesses-neighbors-can/>

³ <https://www.massachusettsmarijuanacounsel.com/2018/11/07/colorado-jury-sides-with-cannabis-grower-in-first-rico-lawsuit/>

⁴ https://www.masslive.com/politics/index.ssf/2018/04/neighborhood_dispute_over_camb.html

⁵ <http://www.thecannifornian.com/cannabis-business/marijuana-stinks-heres-cities-businesses-neighbors-can/>

Fog systems don't need to be in constant use, resulting in lower energy use and lesser maintenance than carbon filters. The perimeter of the grow area would be lined with nozzles, which would get switched on when plants are flowering and system monitors show that wind speed and direction might carry the scent to neighbors.

Manufacturers of such systems include FogCo⁶ and MicroCool.⁷ Product specifications for a MicroCool Fog Application are included as Attachment 1.

Odor Control Standards and Regulations

The regulation and enforcement of odor related issues for outdoor grow facilities is nebulous and has proved challenging to regulate. As a result, many communities have placed temporary moratoriums or have banned facilities similar to the one proposed by the Applicant. As mentioned previously, Denver has set odor standards for outdoor marijuana cultivation based on measurements tracked by portable odor detecting and measuring devices. After a temporary moratorium on outdoor grow facilities, Spokane County, WA has implemented more detailed Zoning Regulations and delegated the enforcement of odor related infractions to the Spokane Regional Clean Air Agency. Elements of the increasingly stringent Spokane Zoning sections relevant to the outdoor growth of marijuana are summarized below.

Spokane Zoning⁸ provides that the Hearing Examiner shall determine the setback requirement based on site specific and operational characteristics (such as topography, canopy size, use of structures to enhance plant growth, use of odor control systems, use of temporary growing structures, ventilation system, etc.) and probable impacts to neighboring properties. Lot coverage for outdoor production is also determined by the Hearing Examiner based on site specific and operational characteristics, and potentially adverse environmental impacts (such as odor, noise, dust, light, traffic) to neighboring properties.

Additionally, and as mentioned previously, operations that are growing and packaging marijuana in Spokane County are required to register with the Spokane Regional Clean Air Agency. The Agency is responsible for local enforcement of state and federal pollution laws, and the requirements for marijuana operators are in response to an explosion of odor complaints occurring from 2014 to 2017; 489 odor complaints during that time period compared to 178 odor complaints for the three years prior to legalization in Washington.

Under the County's regulations, all operations are required to employ odor control measures as necessary to comply with Spokane Regional Clean Air Agency Regulation 1, Section 6.04 – Emission of Air Contaminant: Detriment to Person or Property. Such odor control measures may include the use of environmental buffers, use of carbon absorption media or other controls at all exhaust air discharge points, use of vertical exhaust vents or stacks, and/or completely enclosing the operation and recirculating ventilation air within the enclosure.

With respect to odor, the Agency may take enforcement action if an authorized representative has documented all of the following:

⁶ <https://fogco.com/industries/cannabis/>

⁷ <https://www.microcool.com/dust-odor-control/mmj-cannabis-odor-control.htm>

⁸ <https://www.spokanecounty.org/DocumentCenter/View/19974/Spokane-County-Zoning-Code?bidId=>

1. The detection by a duly authorized representative of an odor at a level 2 or greater, according to the following odor scale:
 - a. Level 0 – no odor detected
 - b. Level 1 – odor barely detected
 - c. Level 2 – odor is distinct and definite, any unpleasant characteristics recognizable
 - d. Level 3 – odor is objectionable enough or strong enough to cause attempts at avoidance
 - e. Level 4 – odor is so strong that a person does not want to remain present.
2. An affidavit from a person making a complaint that demonstrates that they have experienced air contaminant emissions in sufficient quantities and of such characteristics and duration so as to unreasonably interfere with their enjoyment of life and property (the affidavit should describe or identify, to the extent possible, the frequency, intensity, duration, offensiveness, and location of the odor experienced by the complainant).
3. The source of the odor.

Spokane Regional Clean Air Agency regulations and fees are different for indoor and outdoor operations. Both indoor and outdoor grows are required to send registration information to the Clean Air Agency and are subject to random inspections for compliance with plans to reduce odors at property lines. Generally, Agency rules prohibit the emission of an odor "distinct and definite, any unpleasant characteristics recognizable."

The proposed fees range annually from \$528 for small-scale, indoor grows up to nearly \$5,000 for large-scale outdoor operations that do not utilize enclosed structures such as greenhouses.

The pervasive, heavy scent of the cannabis plant during the flowering stage is a concern for every cannabis grower. Municipalities are beginning to pass regulations around noisome odors that can invade a community's quality of life. This is especially true in cities or counties which have enacted special zones for marijuana grow facilities. Failure to provide an adequate odor control system can generate complaints and potentially escalate into costly environmental fines and penalties.

Eliminating (not masking) unpleasant odors is the answer – and MicroCool has the solution.



The Solution

Greenhouse exhaust fans are fitted with a ring of MicroCool nozzles that atomize liquids under high-pressure into billions of micro-fine water droplets (or fog). The MicroCool system injects a highly concentrated (1:1000) mixture of odor-neutralizer into the water fog before dispersing into the air. The droplets' small size (1/10th the diameter of a human hair) creates more surface area which speeds evaporation, instantly releasing the odor-neutralizing product that traps airborne odors and biodegrades the unpleasant smell.

The complete system includes high-pressure pumps, distribution lines, fog rings and injector(s). One pump unit can accommodate multiple exhaust points and support separate zones as required.

Recommended Odor Neutralizer

There are many products on the market that simply mask odors and can contain harmful and equally noxious chemicals. MicroCool partners with OdorGone® industrial strength odor neutralizer to **completely absorb and eliminate odors**. Their non-toxic, eco-friendly botanical extracts have undergone extensive tests and provide a safe solution that works well with MicroCool's systems.

For more odor neutralizer information, please contact:
odorguy@odorgone.com or www.odorgone.com.

- Traps airborne odors almost instantly
- Provides non-toxic odor elimination
- Avoids costly fines

Why Choose MicroCool Fog?

MicroCool has built a 35+ year track record of building fog systems for use in horticulture greenhouses around the world. High-pressure fog systems maintain constant temperature and humidification levels while integrating with existing climate computers, ventilation systems and other control elements.

Our fog systems have been utilized in a wide variety of odor control applications in industries where noxious odors are an unwelcome by-product. From waste transfer stations to sewage treatment plants, odor elimination is effective and environmentally safe.

MicroCool fog systems are the perfect fit for optimizing cannabis growth while maintaining an odor free grow facility.



World leaders in fog and mist technology for cooling, humidification, air quality control



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