

From: [Scott McKenzie, Vertical Integration Corp](mailto:scott@verticalintegration.com)
To: cac@Cannabis
Cc: [Steven Herring, Vertical Integration Corp](mailto:Steven.Herring@VerticalIntegrationCorp.com); [Jeff Silva, Vertical Integration Corp](mailto:Jeff.Silva@VerticalIntegrationCorp.com); [Carlos Beltran, Vertical Integration Corp](mailto:Carlos.Beltran@VerticalIntegrationCorp.com); [DeCuir, Bianca@Cannabis](mailto:DeCuir,Bianca@Cannabis); [Andersen, John@Cannabis](mailto:Andersen,John@Cannabis); [Vella, Michael@Cannabis](mailto:Vella,Michael@Cannabis)
Subject: Urgent: Regulatory Text and/or Interpretation Modifications Needed
Date: Wednesday, November 20, 2024 6:53:19 PM
Attachments: [image001.png](#)
[DCC Regulation Change Proposal, 20241120.pdf](#)

[EXTERNAL]: scott@verticalintegration.com

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For Public Comment at Cannabis Advisory Committee Meeting, 11/21/2024, please see attached.

Thank You,

Scott McKenzie

Vertical Integration, Inc.

scott@verticalintegration.com

(805) 610-9793



DCC Regulation Proposal

for Cannabis Processors

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Introduction

I represent Vertical Integration, Inc., which is a licensed Cannabis Processor and Distributor in San Luis Obispo County that has been operating since September of 2022. I have a Master's Degree in Systems Engineering from the Naval Postgraduate School and a Bachelor's Degree in Business Information Systems from Mississippi State University. I am also the Chief Technical Officer for both Vertical Integration and C-Flow Solutions, LLC, which is a Cannabis Software Company. I am also the architect and author of C-Flow, an Inventory Management System specifically designed for Cannabis Processors to optimize productivity efficiencies in concert with METRC.

The principals at Vertical Integration and C-Flow are seeking either literal modification or modernized interpretations of Cal. Code Regs. Tit. 4, § 15048.5 so that the base requirements of the DCC are met without unrealistic, unachievable, or undue burden on cannabis processor licensees.

Problem Statements with Proposed Solutions

Figure 1 shows the applicable section and highlights three specific problem areas within the section. These issues are real and not a simple matter of convenience. All three of them have relatively simple solutions requiring only a modern interpretation of the regulation in the age of digital information systems, while recognizing that METRC is not a viable real-time inventory management system but rather a reporting system between operators and oversight entities at the California State level. **It is advisable to read through the Background section before reading this section, and then refer to it as you read this section.**

The purpose of this email is to ensure this process meets intent of the regulation section that follows.

Cal. Code Regs. Tit. 4, § 15048.5 - Use of Harvest Lot Name and Package Tags

- a. Harvested plants that are hanging, drying, or curing shall be assigned a unique harvest lot name, which shall be recorded in the track and trace system and placed within clear view of an individual standing next to the lot. The assigned harvest lot name shall match what is in the track and trace system and the harvest lot name next to the lot shall be the same.
- b. Each harvest lot and manufactured cannabis lot shall be assigned a package tag and recorded in the track and trace system. **For each harvest lot, the package tag shall be assigned and recorded in the track and trace system no later than the time at which any part of that harvest lot has finished undergoing any applicable drying, curing, grading, and trimming.**
- c. **For all cannabis and cannabis products held in a container, the package tag shall be affixed to the container holding the cannabis or cannabis products. If cannabis or cannabis products are held in multiple containers, the package tag shall be affixed to one of the containers and the other containers shall be labeled with the applicable UID number. Each unit within the container shall be labeled with the applicable UID number. All containers with the same UID number shall be placed contiguous to one another to facilitate identification by the Department.**

Figure 1: Cal. Code Regs. Tit. 4, § 15048.5, with highlighted sentences that require literal modification or modernized interpretation so that the base requirements of the DCC are met without unrealistic or undue burden on cannabis processor licensees.

Yellow Problem: The worrisome part of this subsection states: “*For each harvest lot, the package tag shall be assigned and recorded in the track and trace system no later than the time at which any part of that harvest lot has finished undergoing any applicable drying, curing, grading, and trimming.*”

Yellow Discussion: The ground truth is that cannabis in a processing facility is like a stream that constantly flows. There are five basic phases to cannabis processing, as shown in Figure 2. Often, a lot is spread across all or most of the phases simultaneously. Also, old containers disappear and new containers are created at the rate of over 100 per day for a facility like Vertical Integration. For instance, there may be twenty 45-lb containers of dry-on-stick material for a particular lot. If a team of laborers is working on bucking that, a new container of bucked material can be produced every hour per laborer. Making a new package in METRC for *any part of that harvest lot (i.e., a container of dry-on-stick) has finished* can result in 3 new packages of bucked material if a new package is created for each container, or 1 new package and 3 UID tags that must then be kept together per section 3 of the regulation. Multiply that by 50 employee labor activities per day and the problem becomes a compounding show-stopper.

Recognizing the METRC is a reporting system to State Oversight Bodies and not an Inventory Management System is the key to this problem. See Background for how this can work in practice. As long as an operator has a robust Inventory Management System in place and can quickly answer questions concerning the state and quantity of their inventory, they should be deemed “compliant” with this subsection.

Yellow Solution: Change “the” to “a” *For each harvest batch, the package tag shall be assigned and recorded in ~~the~~ a track and trace system no later than the time at which any part of that harvest batch has finished undergoing any applicable drying, curing, grading, and trimming.*

Blue Problem: The worrisome part of this subsection states: *“For all cannabis and cannabis products held in a container, the package tag shall be affixed to the container holding the cannabis or cannabis products. If cannabis or cannabis products are held in multiple containers, the package tag shall be affixed to one of the containers and the other containers shall be labeled with the applicable UID number.”*

Blue Discussion: The problem is that, again, cannabis processing is like a river. Everything is moving all the time. Everything changes state and quantity and physical location within the facility. This regulation is fine for a distribution or retail facility where items are put on a shelf and they stay there until they leave. In a processing facility, this is not the case. The probability that the METRC tag is going to get lost in the mix is high.

Blue Solution: Recognize that the cannabis facility is a container. It contains the cannabis and the employees. See the Background section for how this can work in practice. Allow for a master METRC binder that serves as a link between the METRC reporting system and a robust inventory management system that produces UID stickers. See Figure 4 and Figure 5.

Green Problem: The worrisome part of this subsection states *“All containers with the same UID number shall be placed contiguous to one another to facilitate identification by the Department.”*

Green Discussion: It is strongly implied that the requirement is that the Department be able to identify product where it sits. This seems to have stemmed from the fact that METRC tags don't provide any information beyond the UID and keeping containers together makes it manageable for the Department to inspect. However, a robust Inventory Management System that provides detailed labeling as described in the Background section does. In fact, it goes beyond that by telling the inspector the quantity, weight, and state of all the material in inventory. It can do that no matter where the material is physically located. Of course, operators naturally tend to keep things physically together, but, for instance, keeping mold next to viable product is not advisable, and sometimes material from a lot is in bud form in the packing room while other lot material is downstairs being bucked. Again, processing is fluid and the regulations need to recognize that (without sacrificing the base requirement but also without dictating the manner in which it is satisfied).

Green Solution: Recognize “virtual locations” within modern inventory management systems when interpreting this portion of this subsection. As long as every container is well-identified using labels similar to that shown in Figure 3 and the operator can tell the inspector the state, weight, and container count of every lot in inventory, that should satisfy this portion of this subsection.

Background

Vertical Integration is a CA-licensed cannabis processing facility. Our company brings in fresh cannabis plant material and outputs bulk, packaged bud and bulk trim for our clients. We also return mold in a separate package to our clients. Water loss enters the sewer system and stem/leaf waste is delivered to a licensed waste facility. The process for drying, bucking, and trimming cannabis can be summarized thusly:



Figure 2: Typical Flow for Cannabis Processing

1. Wet plant enters our facility and is hung on drying racks for approximately 11 days. Each drying rack can hold approximately 500 lbs of wet plant material. Hanging the wet plant material lot can be accomplished within 0-4 hours, depending on the size of the lot. However, a lot (or several lots of the same strain from the same farm) may arrive over multiple days if it is of significant size, due to the logistics of harvesting and transporting.
2. When the lot is dry, it is taken down and the dry stems with the dry leaves and dry flowers attached (“dry-on-stick”) are placed into multiple large bins. Each bin can hold approximately 45 lbs of dry-on-stick material. The bins are placed in storage while they await the bucking process. Taking down the dry plant material lot can be accomplished within 0-1 hour, depending on the size of the lot.
3. When the bucking for the lot begins, a dry-on-stick bin is taken from storage and multiple workers strip the flowers from the stems. The bucked flower from a single large dry-on-stick bin is placed into multiple smaller totes. Each tote can hold approximately 8 pounds of bucked flower. The totes are placed in storage while they await the trimming process. Flower that contains mold is placed in a separate container that contains all the molded flower for a particular lot. Bucking the dry plant material lot can take a few hours or several days, depending on the size of the lot. Sometimes, due to operational constraints, a bucking phase on a particular lot will be paused and taken up days later. A new 8 lb tote is produced every 1.6 man-hour.
4. When the trimming process for the lot begins, a tote is taken from storage and placed into a trimming and sorting machine. The resulting products are large, medium, and small buds along with trim material. Mold is also identified at this phase of the process and is added to the mold container corresponding with the lot being trimmed. The buds are placed in separate totes according to their respective lot and size and are placed in storage while they await the hand-touch phase. Each tote can hold approximately 10 lbs of machine-trimmed bud, depending on the

density of the bud. Due to storage space constraints, partial totes are combined with other partial totes of the same lot. The trim is placed into cardboard boxes lined with plastic. Each cardboard box holds 30 lbs of trim and every full box is ready for transfer at that point. One partial box of trim at the end of each lot is typically encountered, and a partial box for each lot being machine trimmed inevitably remains at the end of each day. When trimming of the lot begins the next day, the partial box will be used to contain the trim until it is full.

5. When the hand-touch phase for the lot begins, a machine-trimmed tote of buds is placed on a table and hand-touched by several workers. The hand-touch process can take several hours or several days, depending on the size of the lot. The finished buds are placed in another tote and placed in storage to await the bagging and packaging process. Any mold identified in the hand-touch process is added to the designated container that contains all the molded flower for that particular lot.
6. When the bagging and packaging process for the lot begins, totes containing hand-touched material are placed in a sifter to separate the loose material (shake). The buds are packaged into 1-lb bags. The 1-lb bags are placed into cardboard boxes. Each cardboard box can hold 20-25 1-lb bags, depending on the size and density of the buds. Once a box is full, it is ready for transfer. Partial bags and partial boxes at the end of each lot are typically encountered. Any mold identified in the bagging and packaging process is added to the designated container that contains all the molded flower for that particular lot. Bagging and packaging can take several hours and may be conducted over several, non-contiguous days.
7. Phases 3-6 for a particular lot may occur on one day and not the next, subject to operational scheduling requirements. Partial lot shipments are common.

Assuming an average lot size of 10,000 wet pounds of plant material, our facility has the capacity to process 6 lots simultaneously per cycle. In a year, our facility can execute 6 cycles. Assuming 75% water loss, 45% stem and leaf loss, and 55:45 bud-to-solid-waste ratio, Vertical Integration can produce approximately 32,000 containers per year.

Our preferred track-and-trace method is to combine multiple harvest packages of the same strain from the same farm that arrive within a few days of each other (i.e., they are intended to proceed through the processing phases at the same time,) into one Vertical Integration Package Tag that will define the lot. Water loss is recorded in METRC as a single package adjustment when Phase 2 is complete. New package tags of finished trim and bud are created from the single initial Vertical integration Package Tag (Lot) for each box created. A single mold package tag is created from the single initial Vertical integration Package Tag (Lot) at the completion all phases of the Vertical Integration process for each lot. Finally, the initial Vertical integration package tag is adjusted once for unusable material (i.e., stem, leaf, dust, etc.) The package is then finished in METRC.

Vertical Integration uses C-Flow, which is a proprietary cannabis inventory management software product. Each container generated during the cannabis processing flow is labeled with a C-Flow-produced label showing the Vertical Integration Package UID (Lot

Number), a serialized Container Number, the Account (Farm), the Strain, the State¹, the Weight of the container, the Company Name (Vertical Integration), and the Vertical Integration Processor License Number. A QRC containing the Account, Lot Number, and Container Number is also included on the tag which is scanned by C-Flow users using the mobile version of the application for standard inventory management operations such as starting and stopping labor on the container, adding the container to a bill of lading, or to browse summary or specific information about the lot such as:

How many containers of the 101 strain exist in inventory as bucked material?

What other containers of 101 Bud, Finished, Medium exist in inventory?

What is the total weight of the 101 bucked material in inventory?

Are there any containers of dry 101 being bucked right now?



Figure 3: C-Flow Container Label that links back to the METRC Inventory Package Tag (Lot) UID

Since the lot is almost always spread among multiple Phases/Locations within the facility, the master METRC lot tags are maintained on file in a binder in our operations office. Each page within the binder represents a single lot that is currently undergoing processing and contains a master C-Flow tag and the corresponding METRC Package tag.

¹ Superstates are: Wet, Dry, Bucked, Bud, Mold, and Trim. The “Bud” state has two substates: Type and Size. Within “Type” is Machined, Finished, and Packaged. Within Size is Large, Medium, Small, and Micro.

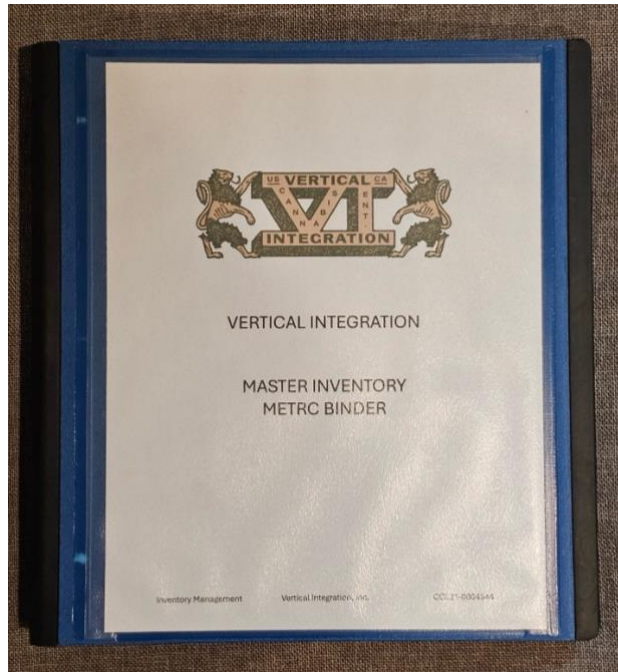


Figure 4: METRC Binder as the Master Container for All Lots Currently In-Process

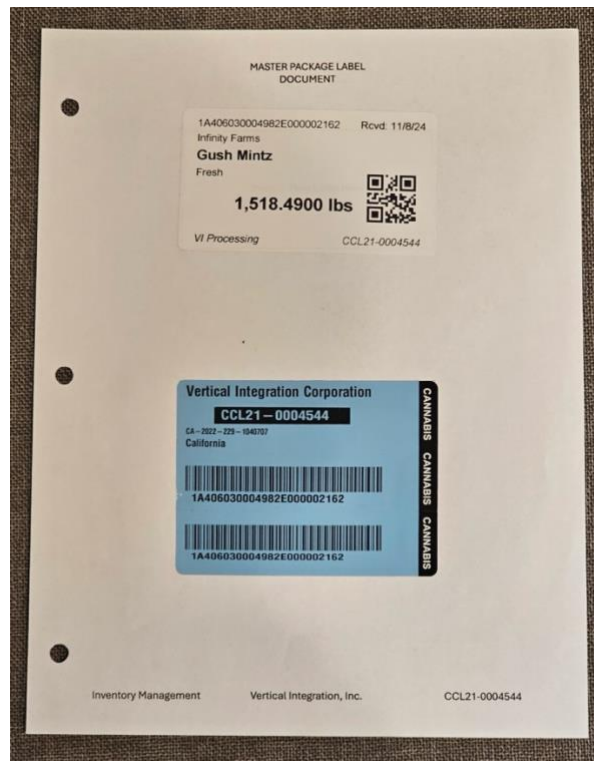


Figure 5: A Single Lot Page from the METRC Binder.

Scanning the C-Flow QRC using the C-Flow mobile app will display all relevant information about the lot such as:

What states currently exist?

How many containers exist and what is the total weight for each state?

What is the percentage completion for each processing phase?

Summary

As can be seen, a modern inventory management system can meet the requirements of the DCC while alleviating undue, unrealistic, and unachievable burden on the operators. By simply acknowledging virtual locations, the building as a container, and not treating METRC as an inventory management system when a suitable inventory management system is in place, Cannabis Processors can stay in business and the DCC can get what it needs in an oversight capacity.

I am available to travel for an in-person meeting with DCC reps for discussions and/or presentations that are specific to cannabis processing track-and-trace.

I am also available for contracted consultation to DCC.

Contact Information

Scott McKenzie
Vertical Integration and C-Flow Solutions
198 Cow Meadow Place
Paso Robles, CA 93446
805-610-9793
scott@verticalintegration.com
admin@cannaflow.app