Medical Marijuana Grower/Processor Permit Application

You may apply for one grower/processor permit in this application for any of the medical marijuana regions listed below. A separate application must be submitted for each grower/processor permit sought by the applicant. Please see the Medical Marijuana Organization Permit Application Instructions for a table of the counties within each medical marijuana region.

Please check to indicate the medical marijuana region, and specify the county, for which you are applying for a grower/processor permit:

☒ Northwest
☒ Southcentral
☐ Northcentral
☐ Northeast
☐ Southeast

County: Crawford
Medical Marijuana Grower/Processor Permit Application

Part A - Applicant Identification and Facility Information

(Scoring Method: Pass/Fail)

For this part, the applicant is required to provide background and contact information for the business or individual applying for a permit.

Section 1 – Applicant Name, Address and Contact Information

**Business or Individual Name and Principal Address**

| Business Name, as it appears on the applicant’s certificate of incorporation, charter, bylaws, partnership agreement or other legal business formation documents: |
| NH (Pennsylvania) LLC |

| Other trade names and DBA (doing business as) names: |
| N/A |

☒ Primary Contact or ☐ Registered Agent for this Application

| Name: Vernon Jim Frazier |
| | |

Section 2 – Facility Information

By checking “Yes,” you affirm that you possess the ability to obtain in an expeditious manner the right to use sufficient land, buildings and other premises and equipment to properly carry on the activity described in the medical marijuana grower/processor permit application, and any proposed location for a grower/processor facility.

PROPOSED GROWER/PROCESSOR FACILITY (PLEASE INDICATE THE FACILITY NAME AS YOU WOULD LIKE IT TO APPEAR ON THE PERMIT)

| Facility Name: NH (Pennsylvania) LLC |
| | |
Part B – Diversity Plan

(Scoring Method: 100 Points)

In accordance with Section 615 of the Act (35 P.S. § 10231.615), an applicant shall include with its application a diversity plan that promotes and ensures the involvement of diverse participants and diverse groups in ownership, management, employment, and contracting opportunities. Diverse participants include a person, including a natural person; individuals from diverse racial, ethnic and cultural backgrounds and communities; women; veterans; individuals with disabilities; corporation; partnership; association; trust or other entity; or any combination thereof, who are seeking a permit issued by the Department of Health to grow and process or dispense medical marijuana. Diverse groups include the following businesses that have been certified by a third-party certifying organization: a disadvantaged business, minority-owned business, and women-owned business as those terms are defined in 74 Pa. C.S. § 303(b); and a service-disabled veteran-owned small business or veteran-owned small business as those terms are defined in 51 Pa. C.S. § 9601.

Section 3 – Diversity Plan

By checking “Yes,” the applicant affirms that it has a diversity plan that establishes a goal of opportunity and access in employment and contracting by the medical marijuana organization. The applicant also affirms that it will make a good faith effort to meet the diversity goals outlined in the diversity plan. Changes to the diversity plan must be approved by the Department of Health in writing.

The applicant further agrees to report participation level and involvement of diverse participants and diverse groups in the form and frequency required by the Department, and to provide any other information the Department deems appropriate regarding ownership, management, employment, and contracting opportunities by diverse participants and diverse groups.

DIVERSITY PLAN

In narrative form below, describe a plan that establishes a goal of diversity in ownership, management, employment and contracting to ensure that diverse participants and diverse groups are accorded equality of opportunity. To the extent available, include the following:

1. The diversity status of the Principals, Operators, Financial Backers, and Employees of the Medical Marijuana Organization.
2. An official affirmative action plan for the Medical Marijuana Organization.

3. Internal diversity goals adopted by the Medical Marijuana Organization.

4. A plan for diversity-oriented outreach or events the Medical Marijuana Organization will conduct during the term of the permit.

5. Contracts with diverse groups and the expected percentage and dollar amount of revenues that will be paid to the diverse groups.

6. Any materials from the Medical Marijuana Organization’s mentoring, training, or professional development programs for diverse groups.

7. Any other information that demonstrates the Medical Marijuana Organization’s commitment to diversity practices.

8. A workforce utilization report including the following information for each job category within the Medical Marijuana Organization:
   a. The total number of persons employed in each job category,
   b. The total number of men employed in each job category,
   c. The total number of women employed in each job category,
   d. The total number of veterans in each job category,
   e. The total number of service-disabled veterans in each job category, and
   f. The total number of members of each racial minority employed in each job category.

9. A narrative description of your ability to record and report on the components of the diversity plan.

Diversity means good business—embracing a multiplicity of viewpoints and cultures drives innovation, improves decision-making, increases employee productivity and retention, and leads to better-served patients. The Applicant is committed to maintaining a company that is diverse in terms of age, race, economic status, class, ability, size, education, national origin, ancestry, sexuality, religion, and gender. Valuing diversity means valuing the voices, experiences, cultures, and intellect of veterans; people of color; people with disabilities; and people of all genders, national origin and socioeconomic status. The ultimate diversity goal of the Applicant is to provide equal opportunity and access in employment and contracting.

The Applicant will ensure that diverse applicants are accorded equal opportunity to work. The following diversity plan has been drafted to meet or exceed the standards promulgated by the U.S. Equal Employment Opportunity Commission (EEOC), and is thereby compliant with Title VII of the Civil Rights Act (Title VII), Americans with Disabilities Act (ADA), Age Discrimination in Employment Act (ADEA), and Genetic Information Nondiscrimination Act (GINA).

This plan demonstrates the Applicant has established diversity goals and an official Affirmative Action Plan; is prepared to implement tactics that have been tailored to recruit and retain a diverse and high-quality employee community; and will implement a recording and reporting system to evaluate continued progress and areas for growth. This plan also provides details as to how these initiatives will be operationalized. The plan is organized in the following sections:
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

- Diversity Status of Principals, Operators, Financial Backers, and Employees
- Official Affirmative Action Plan
- Internal Diversity Goals
- Diversity Outreach and Events Plan
- Contracts with Diverse Groups
- Mentoring, Training and Professional Development
- Additional Indications of the Applicant’s Commitment to Diversity
- Workforce Utilization Report
- Records of and Reporting on the Diversity Plan

1. Diversity Status of Principals, Operators, Financial Backers and Employees

Vernon Jim Frazier, CEO. Diversity status: none.
Billy Morrison, COO and Director of Cultivation. Diversity status: none.
Mike Bain Jr., CFO. Diversity status: none.
Landon Long, Director of Operations and Director of Processing and Extraction. Diversity status: none.
Nickolas J Brait, Director of Transportation. Diversity status: none.
Tom Shannon, Director of Security. Diversity status: none. The Applicant is a wholly owned subsidiary of a publicly traded company. No individual shareholders own five percent or more of the business.

2. Official Affirmative Action Plan

The Applicant is committed to recruiting and retaining a diverse and inclusive group of employees. With this in mind, the Applicant has drafted an official Affirmative Action Plan (AAP), and will begin implementing it during the hiring process. Since the Applicant has not yet hired staff, it cannot provide an AAP based on current numbers. However, the Applicant has provided a description of the exact methodology that shall be used to produce and record job group analysis, utilization analysis, and placement goals.

See Attachment B for the Applicant’s organizational chart.

In order to achieve the goal of equal opportunity and access in employment and contracting, the HR Manager will perform a job group analysis, defining groups as jobs within the establishment that have similar content, wage rates, and opportunities. The HR Manager will then use the US Census and other reliable sources of data to determine the internal and external availability of members of the following groups:

- Women
- LGBQ
- Transgender
- Veterans
- Service-Disabled Veterans
- Persons with Disabilities
- Black or African American
- Asian
Hispanic or Latino  
American Indian or Alaska Native  
Hawaiian or Pacific Islander  
Any other minorities defined by the Department or encountered by the Applicant

The HR Manager will determine external ability based on the percent of persons in each group listed above with requisite skills in the Reasonable Recruitment Area (RRA). During hiring, the HR Manager, in conjunction with the hiring Directors and Managers, will determine internal availability by analyzing those available for promotion within the company. After determining availability, the HR Manager will create placement goals based on the Applicant’s current utilization of the available workforce. All placement goals will be set to be greater than or equal to availability. These goals will serve as targets for the hiring process, rather than rigid quotas. The HR Manager will keep this data in the Applicant’s records for a minimum of 4 years. This data will be used annually to measure the Applicant’s progress using the AAP.

**Designation of Responsibility for Implementation**

The HR Manager will design and oversee effective implementation of the Applicant’s Affirmative Action Plan. These responsibilities will include, but are not limited to:

- Developing Equal Employment Opportunity (EEO) policy statements; affirmative action programs, and internal and external communication procedures;
- Assisting in the identification of AAP problem areas;
- Assisting management in arriving at effective solutions to AAP problems;
- Designing and implementing an internal audit and reporting system that:
  - Measures the effectiveness of the Applicant’s AAP;
  - Determinates the degree to which AAP goals and objectives are met; and
  - Identifies the need for remedial action;
- Keeping the Applicant and the Department informed of Equal Opportunity progress and reporting potential problem areas within the company through yearly reports;
- Reviewing the Applicant’s AAP for qualified minorities and women with all managers and supervisors to ensure that the policy is understood and is followed in all personnel activities; and
- Auditing contents of the Applicant’s employee bulletin board to ensure compliance information is posted and up-to-date.

It will be the responsibility of each Supervisor-level staff member to implement the Applicant’s AAP. These responsibilities include, but are not limited to:

- Assisting in the identification of problem areas, formulating solutions, and establishing departmental goals and objectives when necessary;
- Reviewing the qualifications of all applicants and employees to ensure qualified individuals are treated in a nondiscriminatory manner when hiring, promotion, transfer, and termination actions occur; and
- Reviewing the job performance of each employee to assess whether personnel actions are justified based on the employee’s performance of duties and responsibilities.
Identification of Problem Areas
With support from the Director-level staff, the HR Manager will identify areas of concern in the Applicant’s hiring, promotion, transfer, and termination processes. The HR Manager will then create and implement corrective actions for each area of concern. For example, if annual employee data revealed a high termination rate for veterans in a particular job group, HR Manager would review exit surveys of terminated veterans to confirm their reasons for leaving.

Action-Oriented Programs
The HR Manager will implement action-oriented programs to mitigate problem areas and achieve specific affirmative action goals. These programs include:

- Conducting annual analyses of job descriptions to ensure they accurately reflect job functions
- Making job descriptions available to recruiting sources and available to all employees involved in the recruiting, screening, selection, and promotion process;
- Evaluating the total selection process to ensure freedom from bias through:
  - Reviewing job applications and other pre-employment forms to ensure information requested is job-related;
  - Evaluating selection methods that may have a disparate impact to ensure that they are job-related and consistent with business necessity;
  - Training supervisory staff on proper interview techniques; and
  - Training supervisory staff of Equal Opportunity Employment.
- Using techniques to improve recruitment and increase the flow of minority and female applicants. The Applicant will undertake the following actions:
  - Include the phrase “Equal Opportunity/Affirmative Action Employer” in all printed and digital employment advertisements;
  - Place help wanted advertisements, when appropriate, in local minority news media and women’s news media;
  - Disseminate information on job opportunities to organizations and employment agencies representing women, veterans, and diverse groups when job opportunities occur;
  - Encourage all employees to refer qualified applicants;
  - Request employment agencies to refer qualified women, veterans, and diverse groups;
- Ensuring that all employees are given equal opportunity for promotion. This will be achieved by:
  - Posting promotional opportunities in a place that is accessible to all employees;
  - Evaluating job requirements for promotion; and
  - Offering mentoring, training, and career development to assist employees in identifying promotional opportunities.

Internal Auditing Process
The Applicant’s audit and reporting system will be designed to assist the HR Manager in measuring the effectiveness of the AAP. By documenting personnel activities and identifying problem areas where remedial action is needed, the HR Manager will use the internal auditing process to help determine the degree to which the AAP’s goals have been obtained. Specifically, the HR Manager will review the following personnel activities to ensure nondiscrimination and equal employment opportunity for all
individuals without regard to their race, color, sex, sexual orientation, gender identity, disability status, veteran status, religion, or national origin:

- Recruitment, advertising, and job application procedures;
- Hiring, promotion, upgrading, award of tenure, layoff, recall from layoff;
- Rates of pay and any other forms of compensation including fringe benefits;
- Job assignments, job classifications, job descriptions, and seniority lists;
- Sick leave, leaves of absence, or any other leave;
- Training, apprenticeships, attendance at professional meetings and conferences; and
- Any other term, condition, or privilege of employment.

The HR Manager will maintain copies of key personnel documents as a part of the Applicant’s internal audit process, including but not limited to an applicant flow log showing the name, race, sex, date of application, job title, interview status and the action taken for all individuals applying for job opportunities; a summary of data of external job offers and hires, promotions, resignations, terminations, and layoffs by job group and by sex and minority group identification; summary data of applicant flow by identifying, at least, total applicants, total minority applicants and total female applicants for each position; employment applications (not to exceed one year); and records pertaining to the Applicant’s application system.

The Applicant’s audit system includes a yearly report documenting the Applicant’s efforts to achieve its AAP goals. Management will be asked to report any current or foreseeable problems areas and to outline their recommendations for solutions. In general, if problem areas arise, Management is to report the problem areas immediately to the HR Manager. Upon receipt or during the yearly report, the HR Manager will discuss any problems relating to significant rejection ratios with Supervisor-level staff. The HR Manager will specifically report the status of the Applicant’s goals and objectives to the CEO, COO, and the Department. The HR Manager will also recommend remedial actions for the effective implementation of the AAP.

### 3. Internal Diversity Goals

The Applicant values the insights, relationships and holistic understandings that are deepened when divergent paths come together. With this in mind, the following goals should inform all decisions made with respect to staffing, recruitment, programming, policy, service provision, outreach, and education:

- Utilizing hiring practices that lead to a diverse applicant pool, directed to the ultimate good of person and community
- Fostering a fair and inclusive community where everyone can thrive
- Developing leadership and empowering employees with skills to manufacture and process high quality medical marijuana products in a patient-centered environment
- Working to make medical marijuana products accessible to qualified patients from all backgrounds and experiences
- Educating medical professionals, organizations, and the public regarding proven therapeutic benefits that establish medical marijuana as a legitimate medicine
- Respecting our community by maintaining compliance with state, local, and federal
In order to meet these goals, the Applicant has drafted several policies to supplement and enhance the impacts of the Affirmative Action Policy, including an expansive non-discrimination policy, anti-harassment policies, and reasonable accommodation procedures.

Non-Discrimination Policy
The Applicant will not tolerate discrimination and harassment based on race, disability, sexual orientation, gender identity, gender expression, veteran status, HIV status, socioeconomic status, or religion. This policy applies to allegations arising from conduct by employers. Violations covered by this Policy may include allegations of discriminations based on race, color, and national origin, sexual orientation or preference, sex/gender, Title IX sexual harassment, sexual discrimination, sexual violence, and disability (Section 504 and Title III of the ADA), including failure to accommodate.

Anti-Harassment Policy and Procedures
The Applicant will train all employees in Anti-Harassment Procedures, which will apply to all aspects and stages of employment, from recruitment to termination, from compensation and benefits to chances for promotion. Employees will not be subject to harassment because of their race, sex, gender, disability status, religion, or national origin. Any employee or applicant who believes that they have been subject to harassment because of their race, sex, gender, disability status, religion, or national origin should promptly go to the HR Manager for assistance. Any employee or applicant who believes they have been subject to retaliation should contact the HR Manager. This anti-harassment policy will be communicated to all facility employees and managers annually via e-mail. Additionally, training will be provided annually on the identification and prevention of harassment based on race, sex, gender, disability status, religion, or national origin to all employees. Included in this training will be:

- A clear grievance procedure or set of steps for an employee who has experienced or witnessed discrimination
- A declaration of the Applicant’s commitment to prompt investigation of complaints of discrimination
- A promise of protection against retaliation
- A commitment by the Applicant to be legally bound by its policy

This policy will be internally and externally distributed. Furthermore, Directors and Managers will be trained to monitor the environment for the presence of any forms of harassment, intimidation, or coercion and, where warranted, take corrective action.

The Applicant will ensure that applicants and employees who are individuals with disabilities will have equal access to all of its personnel processes. Printed material containing information on all the anti-harassment and discrimination policies described in this section will be made available in employee common spaces. The contact information for the HR Manager will be prominently displayed on the employee bulletin board to facilitate requests for reasonable accommodation from applicants with disabilities.

Reasonable Accommodations
Supervisor-level staff will be trained to recognize an accommodation request. When requesting an accommodation, employees will only need to use plain English and do not have to mention the ADA or use legal terminology such as the phrase "reasonable accommodation." In general, all an employee needs to say is that she needs an adjustment or change at work for a reason related to a medical condition. Any time an employee indicates that a medical condition is causing a problem, Management will treat it as an accommodation request until a definite determination is made. If there is any doubt about whether a request was made, Management will consult with the HR Manager.

In addition to recognizing a request for accommodation, Management will be trained in the policies and procedures for how accommodation requests are processed. Furthermore, if some accommodations are available to all employees as a matter of policy, Management will ensure that employees with disabilities will not have to jump through unnecessary hoops to get those accommodations, even if needed because of a disability. Management will be trained to respond efficiently to an accommodation request and keep employees informed about the status of their requests.

When a manager is uncertain of how to accommodate a request, management will ask for more information from the employee. If the employee does not know what accommodation is needed or if management wants to explore other options, the employee’s medical provider may be able to provide useful information about the employee’s limitations and effective accommodation options. Management will never consult an employee’s medical provider without full and informed consent from the employee. If neither the employee nor the employee’s medical provider can suggest effective accommodations, employers can contact outside resources, such as the Job Accommodation Network.

Once management has successfully determined and implemented an accommodation, some accommodations may need to be monitored and periodically updated. For example, if the accommodation involves equipment, the equipment may need periodic maintenance. Upon receipt of the accommodation, employees will be informed that they can revisit an accommodation if needed. Management will document their accommodation efforts. Since documentation that contains medical information, it will be maintained in a confidential manner.

When an employee with a known disability has significant difficulty performing her job and it is reasonable to conclude that the performance problem may be related to the known disability, the employee is confidentially notified of the performance problem and asked if the problem is related to the disability. If the employee indicates that the performance problems are related to his or her disability, the employee is asked if reasonable accommodation is needed.

The Applicant shall invite all potential employees to voluntarily self-identify as having a disability before an offer of employment is made, and invite self-identification of disability from all employees every 4 years.

The Applicant certifies that the following three accommodations will be made available to employees upon request:

- Translations of all printed facility materials in Spanish and Dutch
- Access to Relay Services that enable deaf and hard of hearing individuals to access telecommunication services
The Sanitation Director will also procure an FDA-cleared sharps container that is made of puncture-resistant plastic and leak-resistant sides and bottom. This will serve as a resource for employees who need a place to safely dispose of sharps used at work to manage medical conditions including allergies, arthritis, cancer, diabetes, hepatitis, HIV/AIDS, infertility, migraines, multiple sclerosis, osteoporosis, blood clotting disorders, and psoriasis. Finally, the Applicant will establish a generous sick-leave policy, which will be helpful in attracting and retaining employees with disabilities.

4. Diversity Outreach and Events Plan

In order to create and maintain a diverse workplace, The Applicant has developed a two-tiered strategy that focuses on how to recruit diverse employees, as well as how to support all members of the community.

Hiring Practices

The Applicant has generated a plan to utilize hiring practices that will lead to a diverse applicant pool. By employing the following strategies for employee recruitment, the Applicant will actively reach out to applicant pools from groups that we are committed to employing. Employees will screen out any applicants under the age of 21, particularly if the Applicant is recruiting somewhere (e.g. a university career fair) that may attract applicants under the age of 21.

All materials distributed for recruitment purposes will verify that the Applicant is an Equal Opportunity Employer, and that the Applicant does not discriminate on the basis of race, color, sexual orientation, gender identity, disability status, religion, or national origin.

The Applicant will compile a database of resources in order to reach out to applicants once we begin our initial recruitment process. The HR Manager will distribute information regarding job opportunities to the database, with the intention of achieving a diverse pool of applicants. This database also includes, but is not limited to, the following resources:

- Crawford County Office of Veteran’s Affairs
- Precision and Manufacturing Institute’s Job Placement Program
- Veteran’s Hiring Services provided by the Department of Labor
- NAACP’s Job Finder
- LGBTQ student organizations from local vocational schools and universities with master’s programs
- Pennsylvania Career Link
- DiversityFIRST Jobs

Outreach Events

The HR Manager will arrange to have annual community forums with local communities of interest, such as veterans groups and disability justice organizations. The purpose of these will be to brief local organizations on the Applicant’s diversity policies, hiring practices and job opportunities; and to solicit
feedback from these groups on how the Applicant can continue to improve the diversity plan. The HR Manager will evaluate the results of each outreach and recruitment event using the following criteria to see if it is producing measurable results:

- To what extent did the activity attract qualified applicants [from group]?
- To what extent did the activity result in the hiring of qualified individuals [from group]?
- To what extent did the activity expand the Applicant’s outreach to individuals [from group] in the community?
- To what extent did the activity increase capacity/capability to include individuals with disabilities in its workforce?

The HR Manager will utilize the same criteria to conduct its annual assessment of the totality of its outreach and recruitment efforts. If the HR Manager concludes that the outcome of these efforts were not effective in identifying and recruiting qualified individuals from a particular group, the Applicant will create and implement alternative methods. The HR Manager will document outreach activities and assessments of these activities. Records will be kept for a minimum of 4 years.

5. Contracts With Diverse Groups

The Applicant will seek to identify diverse groups with which to secure contracts. These contracts may include security operations, bookkeeping, legal, compliance, and more.

The Commonwealth provides a resource called the Small Diverse Business Program, which will be the first place the Applicant looks when seeking to fill contracts. The Applicant will also consider contacts through diversity-supporting organizations.

The Applicant’s goal is to provide at least half of all contracted amounts to diverse groups. By the second year of operation, the Applicant estimates this to be 50%.

6. Mentoring, Training and Professional Development

Diversity Trainings

The Applicant will engage with a diversity consulting firm or organization to teach cultural competency classes. These annual, mandatory diversity trainings will teach employees how they can make the workplace a more welcoming place for all, examine hidden and overt bias, and give employees conflict-resolution skills and tips about how to be workplace allies. It will also include training on specific issues, including but not limited to the following:

- Gender Identity and Inclusivity

The Applicant is committed to creating a workplace that feels safe and welcoming for transgender, gender non-conforming and transitioning employees. One of the measures the HR Manager will take to facilitate this environment is to provide definitions for terms that employees may or may not use to describe themselves, such as gender identity, gender expression, transgender, and transitioning. The purpose of this is not to label anyone, but rather to assist in understanding the Applicant’s policy and legal obligations.
The HR Manager will also provide training on gender-pronoun policy, which states that an employee has the right to be addressed by the name and pronoun that correspond to the employee’s gender identity, upon request. A court-ordered name or gender change is not required. The intentional or persistent refusal to respect an employee’s gender identity (for example, intentionally referring to the employee by a name or pronoun that does not correspond to the employee’s gender identity) can constitute harassment and is a violation of the Applicant’s policy. During the training, it will be made clear that if someone is unsure what pronoun a coworker might prefer, they can politely ask their coworker how they would like to be addressed.

**Neurodivergence and Inclusivity**

“Neurodivergence” refers to having a brain that functions in ways that diverge significantly from the dominant societal standard. The Applicant will offer training on multiple strategies to accommodate the neurodivergence of employees. For instance, the diversity trainings will explicitly negate the ablest expectation that all employees do the same amount and type of work. Employees will be trained to continually ask the questions: “Is this a reasonable expectation? Who might be excluded from participating if these expectations are in place? What kinds of accommodations could we utilize to allow more people to participate?” As Employees learn more about neurodiversity and disability, they will become more aware of ablest expectations and the negative impact they can have on fellow employees.

**Participant Involvement in Training**

Before a diversity training, all Employees will have the opportunity to fill out an anonymous questionnaire about which topics they would like to learn about in the upcoming training. The HR Manager will identify and work with local, state, and national organizations that focus on and develop Diversity Programs and Trainings. Staff training will be developed following guidelines from these organizations. To improve the efficacy of these trainings, all Employees will be asked to anonymously complete diversity training exit surveys. Management will collect and review these surveys, and incorporate the feedback into the next training. If, during this review process, Management becomes alerted to the presence of an accommodation or discrimination issue that may require urgent attention, they will inform the HR Manager immediately and remedial action will be taken.

**Career Development**

In addition to diversity-specific trainings, the Applicant will provide initial and refresher training on career-building topics. These may be specific to the medical marijuana industry, such as introductions to new medical marijuana cultivation or extraction techniques. In addition, staff will gain detailed knowledge of security, inventory, sanitation, and other topics critical to operating a compliant grower/processor, and also valuable cross-industry skills.

**Leadership Development**

The Applicant will provide internal development opportunities for all employees, through professional organizations such as Americans for Safe Access’ Patient Focused Certification program. Supervisors also have the responsibility to develop staff and encourage advancement within the company, and to encourage staff to attend courses and workshops that may enable them to qualify for current or future open positions. Staff may apply to their Supervisor to seek Applicant support or compensation for continuing education. The HR Manager will ensure that all staff are given the opportunity to participate in all programs for advancement.
7. Additional Indications of the Applicant’s Commitment to Diversity

Facilities and Inclusivity
The Applicant will work with contractors and the Supervisors to ensure that the Facility is designed and maintained in a manner that is accessible to all staff, contractors, and other personnel who may need to be on the premises.

All employees have a right to safe and appropriate restroom facilities. In lieu of providing gendered restroom facilities, the Applicant will make available unisex single-stall restrooms that can be used by any employee.

Supervisor-level staff will ensure that employees are provided a reasonable break time to express breast milk for a nursing child for one year after the child’s birth at each time such employee has need to express milk. The HR Manager shall designate a space, other than a bathroom, that is shielded from view and free from intrusion from coworkers and patients for nursing employees.

Facilities in which there are strong fragrances, harsh fluorescent lights and loud noises are often not accessible for individuals with sensory sensitivities. The Applicant will implement employee protocols to ensure that the facility is maintained in a way that is fragrance-free, reasonably lit, and generally quiet.

The Applicant will work with a contractor to ensure that all doors and hallways are wheelchair accessible.

8. Workforce Utilization Report

The table below is based on current known employees, with the anticipated number of employed persons in parentheses. This anticipated number is based on initiating operations with two Grower/Processor facilities.

<table>
<thead>
<tr>
<th>Job category</th>
<th># persons employed</th>
<th># men employed</th>
<th># women employed</th>
<th># veterans employed</th>
<th># service-disabled veterans employed</th>
<th># racial minority employed</th>
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</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>3 (3)</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directors</td>
<td>5 (6)</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Managers</td>
<td>0 (5)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grower/processor Employees</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delivery Personnel</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Security guards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales personnel</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

9. Records of and Reporting on the Diversity Plan
The Director of Operations, based on the internal report from the HR Manager, will keep the Department informed of equal opportunity and diversity progress through an annual report. This yearly report will include data from the quarterly reports that will be compiled by the HR Manager and reviewed by the Director of Operations.

The annual report submitted to the Department will include, at minimum, the following:

- The representation of diverse employees, contractors, and other participants in the Applicant’s operations, including an updated workforce utilization report
- Efforts to reach out to and recruit diverse participants for employment, especially for managerial and executive positions
- Efforts to retain diverse participants
- A list of all contracts entered into, or transactions conducted by the Applicant for goods and services with diverse groups
- The efficacy of these efforts
- Any updates or changes to the AAP for the following year, based on the efficacy reports developed by the Applicant and other organizations and agencies, in order to improve its efforts to encourage and promote participation by diverse participants and diverse groups

In addition to the records that the HR Manager will keep in order to support the AAP, the diversity and outreach events, and the diversity trainings, the HR Manager will also compile and maintain all materials evidencing the Applicant’s affirmative action efforts, such as copies of letters sent to vendors stating the Equal Opportunity Employer policy; copies of letters sent to recruitment sources and community organizations; and copies of contract language incorporating our non-discrimination policy.

Any written reports and referenced exhibits developed or created as a result of a discrimination investigation that relates to a Grower/Processor shall be retained by the HR Manager for the length of the employee’s term of employment and for a period of 4 years from time of separation of employment by the employee.

Part C - Applicant Background Information

(Scoring Method: Pass/Fail)

For this part the applicant is required to provide background and contact information for the principals, financial backers, operators and employees.

Section 4 – Principals, Financial Backers, Operators and Employees

A. Please list Principals, Financial Backers and Operators
<table>
<thead>
<tr>
<th>Name and Residential Address</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Name:</strong> Vernon</td>
</tr>
<tr>
<td>Occupation: Chief Executive Officer</td>
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<th>Name and Residential Address</th>
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<tbody>
<tr>
<td><strong>First Name:</strong> Billy</td>
</tr>
<tr>
<td>Occupation: Chief Operating Officer and Director of Cultivation and Extraction</td>
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</tbody>
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<tbody>
<tr>
<td><strong>First Name:</strong> Nickolas</td>
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<tr>
<td>Occupation: Strategic Account Manager</td>
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<tr>
<td><strong>First Name:</strong> Thomas</td>
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<tr>
<td>Occupation: Owner, Security Inc.</td>
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<tr>
<td><strong>First Name:</strong> Michael</td>
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<tr>
<td>Occupation: Business Consultant</td>
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<tr>
<td><strong>First Name:</strong> Jeffrey</td>
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<td>Occupation: Chief Executive Officer</td>
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</table>
B. Please list Employees

Please provide the following information for any employees that have been hired to date to work for the applicant listed in this application. If no employees are currently employed, please leave this section blank.

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<th>Name and Residential Address</th>
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<td>First Name: N/A</td>
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<td>Occupation:</td>
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Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

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<th>Also known as:</th>
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<td>Address Line 1:</td>
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Name and Residential Address

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If more space is required, please submit additional information on other individuals in a separate document titled “Employees (Contd.)” in accordance with the attachment file name format requirements and include it with the attachments.

Section 5 – Moral Affirmation

By checking “Yes,” you affirm that each principal, financial backer, operator and employee listed in this permit application is of good moral character.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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</table>

Section 6 – Compliance with Applicable Laws and Regulations

By checking “Yes,” you affirm that you, as well as the principals, financial backers, operators and employees listed in this permit application are able to continuously comply with all applicable Commonwealth laws and regulations relating to the operation of a medical marijuana grower/processor facility.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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Section 7 – Civil and Administrative Action

For the statements below:
- By checking “Yes,” you affirm the statement
- If you check “No,” you must state your reasoning in “Schedule A” below

<table>
<thead>
<tr>
<th>Civil and Administrative Action</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>The applicant has never responded to an action resulting in sanctions, disciplinary actions or civil monetary penalties being imposed relating to a registration, license, permit or any other authorization to grow, process or dispense medical marijuana in any state.</td>
<td>☑</td>
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<tr>
<td>The applicant has never responded to a civil or administrative action relating to a registration, license, permit or authorization to grow, process or dispense medical</td>
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</table>
marijuana in any state.

The applicant has never been accused of obtaining a registration, license, permit or other authorization to operate as a grower, processor or dispensary of medical marijuana in any jurisdiction by fraud, misrepresentation, or the submission of false information.

No civil or administrative action has been taken against the applicant under the laws of the Commonwealth or any other state, the United States or a military, territorial or tribal authority relating to a principal, operator, financial backer or employee of the applicant’s profession, or occupation or fraudulent practices, including fraudulent billing practices.

<table>
<thead>
<tr>
<th>Defendant</th>
<th>Name of Case &amp; Docket #</th>
<th>Nature of Charge or Complaint</th>
<th>Date of Charge or Complaint</th>
<th>Disposition</th>
<th>Name and Address of the Administrative Agency Involved, and the Tribunal or Court</th>
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<tr>
<td>N/A</td>
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Part D – Plan of Operation
(Scoring Method: 550 Points)

A PLAN OF OPERATION IS REQUIRED FOR ALL GROWER/PROCESSOR PERMIT APPLICATIONS. THE PLAN OF OPERATION MUST INCLUDE A TIMETABLE OUTLINING THE STEPS THE APPLICANT WILL TAKE TO BECOME OPERATIONAL WITHIN SIX MONTHS FROM THE DATE OF ISSUANCE OF A PERMIT. THE PLAN OF OPERATION MUST ALSO DESCRIBE HOW THE APPLICANT’S PROPOSED BUSINESS OPERATIONS WILL COMPLY WITH STATUTORY AND REGULATORY REQUIREMENTS NECESSARY FOR THE CONTINUED OPERATION OF THE FACILITY.

Plan of Operation

What must be covered in a Plan of Operation?

Applicants must identify how they will comply with relevant laws and regulations regarding:

- Security and surveillance
- Employee qualifications and training
- Transportation of medical marijuana and medical marijuana products
- Storage of seeds, immature medical marijuana plants, medical marijuana plants, medical marijuana, and medical marijuana products
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

- Labeling of medical marijuana products
- Inventory management, including management of returns of medical marijuana product that is expired, damaged or recalled
- Appropriate nutrient practice, using fertilizers or hydroponic solutions, and the recording of information on the use of fertilizers and growth additives
- Quality control and testing of medical marijuana and medical marijuana products for potential contamination
- Growing of medical marijuana, including a detailed summary of policies and procedures for its growth and harvest
- Recordkeeping
- Preventing unlawful diversion of medical marijuana and medical marijuana products
- Timetable outlining the steps required for the applicant to become operational within six months from the date of issuance of a permit

By checking “Yes,” you affirm that you are able to continuously maintain effective security, surveillance and accounting control measures to prevent diversion, abuse and other illegal conduct regarding medical marijuana plants and medical marijuana.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Estimated Date</th>
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Section 9 – Employee Qualifications, Description of Duties and Training

A. Please provide a description of the duties, responsibilities, and roles of each principal, financial backer, operator and employee.

1. Principal: The Principals own the Applicant company and have the ability to control the Applicant and its direction. They hold the legal responsibility for the Entity, and are able to change the senior management, including the CEO, at their discretion. The Applicant is owned by a publicly traded company. No individual shareholder holds a 5% interest or more. Duties: Sign legal documents or designate an agent to do so. Hire and vet CEO, COO, CFO, and other senior staff to implement the business vision in a compliant manner.

2. Financial Backer: The Applicant is funded by a publicly traded company. No individual shareholder holds a 5% interest or more.

3. Operator/Employee: CEO: This position is filled by Vernon Jim Frazier. Role: The CEO is in charge of the Applicant’s operations, and responsible for the success or failure of the company. He holds ultimate responsibility for reporting to the Principals and the Department, for maintaining continuous compliance and ensuring the safety and quality of medications produced, and for managing the team of Directors in charge of the facility. Responsibility: Maintaining continuous compliance: Establish a culture of communal ownership over compliance; instilling in all employees an awareness of the importance of compliance. Oversee the creation, regulatory review, and implementation of all standard operating procedures. Monitor compliance enforcement and oversight to ensure all requirements for the maintenance of the Commonwealth medical marijuana permit are maintained. Retain legal and other qualified support services to ensure the Applicant maintains continuous compliance. Responsibility: Ensuring top-quality medical marijuana and medical marijuana products. Vet and hire qualified Directors of Operations, Cultivation, Processing and Extractions, Transportation and Security, and Quality Assurance. Resolve differences between senior team members. Communicate the strategy and vision. Responsibility: Securing a Commonwealth permit for the medical marijuana organization: Vet and hire consultants, contractors, and others to take care of requirements. Set the direction for the application and ensure consultants and contractors act and implement
accordingly. Responsibility: Setting strategy and direction: Duties: Set short- and long-term budgets. Support medical marijuana research objectives and strategy. Oversee diversity plan and community impact plan implementation. Form partnerships. Decide on product lines and product pricing. Responsibility: Modeling and setting the company’s culture, values, and behavior: Duties: Determine the Applicant’s values and desired culture. Communicate behavioral norms and expectations to the senior leadership team, and model those norms for the company. Responsibility: Allocating capital to the Applicant’s priorities. Duties: Fund projects which support the strategy. Ramp down projects which do not support the strategy, or which are losing money. Manage the firm’s capital and major expenditures. Determine when the owners receive returns on their investments. Report on finances to the Principals

4. Operator/Employee: COO: This role is filled by Billy Morrison. In addition to this role, Billy will act as the Director of Cultivation. Role: The Chief Operations Officer will provide the leadership, management and vision necessary to ensure that the company has the proper operational controls, administrative and reporting procedures, and people systems in place to effectively grow the organization and to ensure financial strength and operating efficiency. The COO will report to the CEO and shareholders. Responsibility: Facilitating company sustainability and growth. Support the CEO in decision-making and implementing plans. Lead the executive team in daily operations and report to the CEO. Responsibility: Maintaining continuous compliance. Duties: Oversee the creation, regulatory review, and implementation of all standard operating procedures. Monitor compliance enforcement and oversight to ensure all requirements for the maintenance of the Commonwealth medical marijuana permit are maintained. Retain legal and other qualified support services to ensure the Applicant maintains continuous compliance. Responsibility: Ensuring top-quality medical marijuana and medical marijuana products. Duties: Set comprehensive goals for performance and growth, while taking into consideration quality and safety mandates. Evaluate performance

5. Operator/Employee: CFO: This role is filled by Mike Bain Jr. Role: The Chief Financial Officer develops the financial well-being of the organization by providing financial projections and accounting services; preparing growth plans; and directing staff. The CFO will report to the CEO and shareholders. Responsibility: Maintaining financial compliance and growth. Ensure cash flow is appropriate for the organization’s operations. Support CEO decisions with financial and accounting information, analysis, and recommendations. Develop financial strategies by forecasting capital, facilities, and staff requirements; identifying monetary resources; developing action plans. Establish finance operational strategies by evaluating trends; establishing critical measurements; determining production, productivity, quality, and customer-service strategies; designing systems; accumulating resources; resolving problems; implementing change. Monitors financial performance by measuring and analyzing results; initiating corrective actions; minimizing the impact of variances. Responsibility: Overseeing labor costs and strategies. Duties: Accomplish finance human resource strategies by determining accountabilities; communicating and enforcing values, policies, and procedures. Implementing recruitment, selection, orientation, training, coaching, counseling, disciplinary, and communication programs. Plan, monitor, appraise, and review job contributions. Plan and review compensation strategies. Update job knowledge by remaining aware of new regulations; participating in educational opportunities; reading professional publications; maintaining personal networks; participating in professional
6. **Operator/Employee: Director of Operations.** This role is filled by Landon Long. In addition to this role, Landon will also act as the Director of Processing and Extraction. **Role:** The Director of Operations is in charge of liaising with management to make decisions for operational activities and set strategic goals; and planning and monitoring the day-to-day running of business to ensure efficiency and success of facility operations. The Operations Director reports to the COO. **Responsibility:** Ensuring continuous compliance. **Duties:** Manage day-to-day operations and report to the COO. Monitor all regulatory updates from the Department of Health, and update policies, checklists, manuals, and training as required for compliance. Coordinate with Supervisor-level staff to ensure all employees are trained on updated materials. Investigate any concerning conduct or situation, including any inkling that suggests the Applicant may be out of compliance; if employee misconduct is suspected, coordinate with the HR Manager and law enforcement. Ensure the maintenance of all appropriate records, including the electronic tracking system. Periodically verify the work of Supervisory Level Staff through informal unannounced audits. Third-party professionals, such as accountants, may also be invited to perform audits. **Responsibility:** Monitor the implementation of the Applicant’s Diversion Prevention Procedures. **Duties:** Create and facilitate a training based on OSHA’s “Guide to Worker Safety and Health in the Marijuana Industry” (See Attachments). Coordinate with the Directors to ensure all staff receive all required training.
7. **Operator/Employee: Director of Cultivation:** This role is filled by Billy Morrison. In addition to this role, Billy will act as the COO. **Role:** The Cultivation Director oversees all employees and operations in the cultivation areas of the facility. This includes all medical marijuana plant production, procedures, and inspection of agricultural equipment to ensure efficiency and accuracy in the cultivation process. **Responsibility:** Ensure continuous compliance with the Department. **Duties:** Monitor regulatory updates from the Department of Health, and in the event that any relevant regulations change, update all equipment and procedures. In the event of any updates to checklists and procedures, coordinate with the other Directors to ensure all employees are trained on updated materials. Train all employees on the proper safety and security procedures that have been adopted by the Applicant. **Responsibility:** Setting the direction for the cultivation team. **Duties:** Coordinate with the Director of Processing and Extraction to determine optimal finished products and requisite medical marijuana plants in order to supply required materials. Establishing cultivation modalities, including strategic decisions regarding growing methods, pesticide and nutrient treatments, growth schedules, lighting, and other high-level operational decisions. Developing or overseeing the development of standard operating procedures for implementing the cultivation plan. Hiring cultivation managers and employees with the requisite skills. Establishing training requirements and overseeing training. **Responsibility:** Evaluating new opportunities to improve the cultivation processes. **Duties:** Maintain and expand knowledge of techniques, inputs, strains, lighting, and other technical details. Review and monitor cultivation operations and identify opportunities for efficiency improvements.

8. **Operator/Employee: Director of Processing and Extraction:** This role is filled by Landon Long. In addition to this role, Landon will act as the Director of Operations. **Role:** The Processing Director oversees all employees and operations in the Processing and Extraction lab areas of the facility. This includes all medical marijuana extraction processes, procedures, and inspection of extraction materials, supplies, and equipment to ensure efficiency and accuracy in the botanical extraction process. **Responsibility:** Ensure continuous compliance with the Department. **Duties:** Monitor regulatory updates from the Department of Health, and in the event that any relevant regulations change, update all equipment and procedures. In the event of any updates to checklists and procedures, coordinate with the other Directors to ensure all employees are trained on updated materials. Train all employees on the proper safety and security procedures that have been adopted by the Applicant. **Responsibility:** Setting the direction for the processing team. **Duties:** Coordinate with the Director of Cultivation to determine optimal finished products and plan processing equipment and procedures. Establish processing techniques and reliable, repeatable standard operating procedures for each product, covering all stages of development after (or including) the curing process. Hire processing managers and employees with the requisite skills. Establish training requirements and oversee training. Work with the Director of Quality Assurance to establish and oversee stability testing, validation tests, and other documentation that verifies product safety and consistency; and otherwise maintain product quality and safety. **Responsibility:** Evaluating new opportunities to improve the processing protocols. **Duties:** Maintain and expand knowledge of all associated technical practices. Review and monitor processing operations and identify opportunities for efficiency improvements.
B. PLEASE DESCRIBE THE EMPLOYEE QUALIFICATIONS OF EACH PRINCIPAL AND EMPLOYEE.

1. Principal: Principals must align with the Applicant’s mission and vision, and must be able to raise sufficient capital to sustain the Applicant’s operations.

2. Financial backer: Employee qualifications are not required for this role.

3. Operator/Employee: CEO Vernon Jim Frazier: Over 23 years of experience in the food industry and a proven track record of developing and implementing branded and private label programs while driving profits. Owns and operates a successful Florida-based candy and chocolate business which has been a well-known manufacturer of confectioneries for over 40 years. Managed the expansion of his plant facilities and significantly expanded sales and developed new customer bases across all retail channels.

4. Operator/Employee: COO Billy Morrison: Founded Peloton Pharmaceuticals, where he designed, developed, and deployed a nearly autonomous grow system that mitigates labor and reduces cost. Experience in operating marijuana companies: The Union Collective, a successful delivery dispensary; Capstone Analytical, one of the first Bay Area thin layer chromatography testing facilities; and TemezExtracts. Pioneered a patented water conserving technology that eliminates water change outs.

5. Operator/Employee: CFO Mike Bain Jr.: Over 25 years of experience in public accounting providing tax and accounting services to businesses and high net worth individuals. Partner in a certified public accounting firm, Mowry, Marty & Bain Consulting, LLC and registered investment advisory firm, MBIA Capital Advisors, both located in Cincinnati, Ohio. Assists Nutritional High with various sources of financing needed for future expansion projects. Is a Certified Public Accountant (CPA) in the US.

6. Operator/Employee: Director of Operations Landon Long: Founded Infusion Factory, one of the nations first cannabis specific contract manufacturers and white label services provider focused on the formation, production and commercialization of safe, consistent, dose accurate and compliant medicinal products. Owns and operates a successful vapor hardware company that has been creating innovative medicinal, vapor and ancillary consumer products since 2011. Over 20 years of combined Marketing, Production and Cannabis Specific Expertise.

7. Operator/Employee: Director of Cultivation Billy Morrison: Founded Peloton Pharmaceuticals, where he designed, developed, and deployed a nearly autonomous grow system that mitigates labor and reduces cost. Experience in operating marijuana companies: The Union Collective, a successful delivery dispensary; Capstone Analytical, one of the first Bay Area thin layer chromatography testing facilities; and TemezExtracts. Pioneered a patented water conserving technology that eliminates water change outs.

8. Operator/Employee: Director of Processing and Extraction Landon Long: Founded Infusion Factory...
Pennsylvania Department of Health  
Medical Marijuana Grower/Processor Permit Application

Factory, one of the nation's first cannabis specific contract manufacturers and white label services provider focused on the formation, production and commercialization of safe, consistent, dose accurate and compliant medicinal products. Owns and operates a successful vapor hardware company that has been creating innovative medicinal, vapor and ancillary consumer products since 2011. Over 20 years of combined Marketing, Production and Cannabis Specific Expertise

<table>
<thead>
<tr>
<th>C.</th>
<th>PLEASE DESCRIBE THE STEPS THE APPLICANT WILL TAKE TO ASSURE THAT EACH PRINCIPAL AND EMPLOYEE WILL MEET THE TWO-HOUR TRAINING REQUIREMENT UNDER THE ACT AND REGULATIONS.</th>
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<tbody>
<tr>
<td>1.</td>
<td>Principal: The Applicant is a wholly owned subsidiary of a publicly traded company. No individual shareholder has 5 percent or greater interest in the Applicant.</td>
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<td>2.</td>
<td>Financial backer: The two-hour training is not required for this role.</td>
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<tr>
<td>3.</td>
<td>Operator/Employee: CEO: The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. The CEO commits to taking this training as soon as possible. Training and subsequent verification will be documented as part of the Applicant's records. If available, any form of confirmation from the program will be included in this record. During hiring procedures, the Applicant will offer use of on-site resources (under escort) in order to complete the two-hour training, if needed. Prior to any operator or employee working a shift on-site, his or her supervisor will verify that the operator/employee has completed the required two-hour training. Any operator/employee who seeks to come to work without first completing this training will be put on notice that coming to another scheduled shift without documented proof of training completion will be grounds for termination, unless the operator/employee requires reasonable accommodation. If the operator/employee does not have access to the appropriate technology, or some other obstacle has interfered, the CEO will seek to accommodate such a need.</td>
</tr>
<tr>
<td>4.</td>
<td>Operator/Employee: COO: The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. The COO commits to taking this training as soon as possible. Training and subsequent verification will be documented as part of the Applicant's records. If available, any form of confirmation from the program will be included in this record. Training and subsequent verification will be documented as part of the Applicant's records. If available, any form of confirmation from the program will be included in this record. During hiring procedures, the Applicant will offer use of on-site resources (under escort) in order to complete the two-hour training, if needed. Prior to any operator or employee working a shift on-site, his or her supervisor will verify that the operator/employee has completed the required two-hour training. Any operator/employee who seeks to come to work without first completing this training will be put on notice that coming to another scheduled shift without documented proof of training completion will be grounds for termination, unless the operator/employee requires reasonable accommodation. If the operator/employee does not have access to the appropriate technology, or some other obstacle has interfered, the CEO will seek to accommodate such a need.</td>
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</tbody>
</table>
without documented proof of training completion will be grounds for termination, unless the operator/employee requires reasonable accommodation. If the operator/employee does not have access to the appropriate technology, or some other obstacle has interfered, the CEO will seek to accommodate such a need.

5. **Operator/Employee: CFO:** The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. The CFO commits to taking this training as soon as possible. Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record. During hiring procedures, the Applicant will offer use of on-site resources (under escort) in order to complete the two-hour training, if needed. Prior to any operator or employee working a shift on-site, his or her supervisor will verify that the operator/employee has completed the required two-hour training. Any operator/employee who seeks to come to work without first completing this training will be put on notice that coming to another scheduled shift without documented proof of training completion will be grounds for termination, unless the operator/employee requires reasonable accommodation. If the operator/employee does not have access to the appropriate technology, or some other obstacle has interfered, the CEO will seek to accommodate such a need.

6. **Operator/Employee: Director of Operations:** The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record. During hiring procedures, the Applicant will offer use of on-site resources (under escort) in order to complete the two-hour training, if needed. Prior to any operator or employee working a shift on-site, his or her supervisor will verify that the operator/employee has completed the required two-hour training. Any operator/employee who seeks to come to work without first completing this training will be put on notice that coming to another scheduled shift without documented proof of training completion will be grounds for termination, unless the operator/employee requires reasonable accommodation. If the operator/employee does not have access to the appropriate technology, or some other obstacle has interfered, the CEO will seek to accommodate such a need.

7. **Operator/Employee: Director of Cultivation:** The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record. During hiring procedures, the Applicant will offer use of on-site resources (under escort) in order to complete the two-hour training, if needed. Prior to any operator or employee working a shift on-site, his or
her supervisor will verify that the operator/employee has completed the required two-hour training. Any operator/employee who seeks to come to work without first completing this training will be put on notice that coming to another scheduled shift without documented proof of training completion will be grounds for termination, unless the operator/employee requires reasonable accommodation. If the operator/employee does not have access to the appropriate technology, or some other obstacle has interfered, the CEO will seek to accommodate such a need.

8. Operator/Employee: Director of Processing and Extraction: The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record. During hiring procedures, the Applicant will offer use of on-site resources (under escort) in order to complete the two-hour training, if needed. Prior to any operator or employee working a shift on-site, his or her supervisor will verify that the operator/employee has completed the required two-hour training. Any operator/employee who seeks to come to work without first completing this training will be put on notice that coming to another scheduled shift without documented proof of training completion will be grounds for termination, unless the operator/employee requires reasonable accommodation. If the operator/employee does not have access to the appropriate technology, or some other obstacle has interfered, the CEO will seek to accommodate such a need.

IF MORE SPACE IS REQUIRED FOR ANY OF THE ABOVE THREE COMPONENTS OF SECTION 9 (A, B AND C), PLEASE SUBMIT ADDITIONAL INFORMATION IN A SEPARATE DOCUMENT TITLED “EMPLOYEE QUALIFICATIONS, DESCRIPTION OF DUTIES AND TRAINING (CONTD.)” IN ACCORDANCE WITH THE ATTACHMENT FILE NAME FORMAT REQUIREMENTS AND INCLUDE IT WITH THE ATTACHMENTS.

Section 10 – Security and Surveillance

A GROWER/PROCESSOR FACILITY MUST HAVE SECURITY AND SURVEILLANCE SYSTEMS, UTILIZING COMMERCIAL-GRADE EQUIPMENT, TO PREVENT UNAUTHORIZED ENTRY AND TO PREVENT AND DETECT DIVERSION, THEFT, OR LOSS OF ANY SEEDS, IMMATURE MEDICAL MARIJUANA PLANTS, MEDICAL MARIJUANA PLANTS, MEDICAL MARIJUANA AND MEDICAL MARIJUANA PRODUCTS.

PLEASE PROVIDE A SUMMARY OF YOUR PROPOSED SECURITY AND SURVEILLANCE EQUIPMENT AND MEASURES THAT WILL BE IN PLACE AT YOUR PROPOSED FACILITY AND SITE. THESE MEASURES SHOULD COVER, BUT ARE NOT LIMITED TO, THE FOLLOWING: GENERAL OVERVIEW OF THE EQUIPMENT, MEASURES AND PROCEDURES TO BE USED, ALARM SYSTEMS, SURVEILLANCE SYSTEM, STORAGE, RECORDING CAPABILITY, RECORDS RETENTION, PREMISES ACCESSIBILITY, AND INSPECTION/SERVICING/ALTERATION PROTOCOLS.
Section 11 – Transportation of Medical Marijuana

<table>
<thead>
<tr>
<th>A. Transportation</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

By checking “Yes,” you affirm that any delivery of medical marijuana to any other medical marijuana grower/processor facility, dispensary, or approved laboratory within the Commonwealth will adhere to the following:

If you check “No” to any statement, you must state the reasoning for doing so at the end of this section. If issued a permit, you must be able to affirm each statement by the time the Department determines you to be operational under the Act and regulations.

- Medical marijuana will only be delivered between 7 a.m. and 9 p.m.
- Medical marijuana will not be transported to any location outside of this Commonwealth.
- A global positioning system will be used to ensure safe, efficient delivery of the medical marijuana to a medical marijuana organization or approved laboratory.

In addition to having a transport vehicle staffed with a delivery team consisting of at least two individuals, the applicant affirms the following:

- At least one delivery team member will remain with the vehicle at all times that the vehicle contains medical marijuana.
- Each delivery team member shall have access to a secure form of communication with the grower/processor, such as a cellular telephone, at all times that the vehicle contains medical marijuana.
### Medical Marijuana Grower/Processor Permit Application

- **Upon demand, each delivery team member shall produce an identification badge or card to the Department or its authorized agents, law enforcement or other Federal, State, or local government officials if necessary to perform the government officials’ functions and duties.**

- **Each delivery team member shall have a valid driver’s license.**

- **While on duty, a delivery team member will not wear any clothing or symbols that may indicate ownership or possession of medical marijuana.**

- **Medical marijuana stored inside the transport vehicle may not be visible from the outside of the transport vehicle.**

- **A delivery team shall proceed in a transport vehicle from the facility, where the medical marijuana is loaded, directly to the medical marijuana organization or approved laboratory, where the medical marijuana is unloaded, without unnecessary delays. Notwithstanding the foregoing, a transport vehicle may make stops at multiple facilities or approved laboratories, as appropriate, to deliver medical marijuana.**

- **Any vehicle accidents, diversions, losses, or other reportable events that occur during transport of medical marijuana must be immediately reported to the Department either through a designated phone line established by the Department or by electronic communication with the Department in a manner prescribed by the Department.**

- **The Department shall be notified daily of the grower/processor’s delivery schedule, including routes and delivery times, either through a designated phone line established by the Department or by electronic communication with the Department in a manner prescribed by the Department.**

- **A transport vehicle is subject to inspection by the Department or its authorized agents, law enforcement or other Federal, State or local government officials if necessary to perform the government officials’ functions and duties.**

- **A transport vehicle may be stopped and inspected along its delivery route or at any medical marijuana organization or approved laboratory.**

- **If a third-party contractor is used, the contractor must comply with all the transportation requirements listed in the Act and regulations.**

### B. Transport Manifest

By checking “Yes” to any statement, you affirm that the transport manifest (printed or electronic) that accompanies every transport vehicle will contain the following: **Yes** | **No**
information and meet the following requirements:

If you check “No” to any statement, you must state the reasoning for doing so at the end of this section. If issued a permit, you must be able to affirm each statement by the time the Department determines you to be operational under the Act and regulations.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The name, address and permit number of the medical marijuana organization or approved laboratory receiving the delivery, and the name of and contact information for a representative of the medical marijuana organization or approved laboratory.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The quantity, by weight or unit, of each medical marijuana harvest batch, harvest lot or process lot contained in the transport, along with the identification number for each batch or lot.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The date and approximate time of departure.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The date and approximate time of arrival.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The transport vehicle’s make, model, and license plate number.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The identification number of each member of the delivery team accompanying the transport.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• When a delivery team delivers medical marijuana to multiple medical marijuana organizations or approved laboratories, the transport manifest must correctly reflect the specific medical marijuana in transit; each recipient will also provide the grower/processor with a printed receipt for the medical marijuana received.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• All medical marijuana being transported must be packaged in shipping containers and labeled in accordance with § 1151.34 (relating to packaging and labeling of medical marijuana).</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• Separate copies of the transport manifest will be provided to each recipient receiving the medical marijuana described in the transport manifest. To maintain confidentiality, a grower/processor may prepare separate manifests for each recipient.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The applicant acknowledges that, upon request, a copy of the printed transport manifest, and any printed receipts for medical marijuana being transported, will be provided to the Department or its authorized agents, law enforcement, or other Federal, State, or local government officials if necessary to perform the government officials’ functions and duties.</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>
PLEASE PROVIDE AN EXPLANATION OF ANY RESPONSES ABOVE THAT WERE ANSWERED AS A “NO” AND HOW YOU WILL MEET THESE REQUIREMENTS BY THE TIME THE DEPARTMENT DETERMINES YOU TO BE OPERATIONAL UNDER THE ACT AND REGULATIONS:

N/A
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

DOH Redacted

51
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

DOH Redacted
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application
Section 12 – Storage of Medical Marijuana

<table>
<thead>
<tr>
<th>A. Storage Requirements</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>By checking “Yes” to any statement, you affirm that the plan of operation will address the below statements:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you check “No” to any statement, you must state the reasoning for doing so at the end of this section. If issued a permit, you must be able to affirm each statement by the time the Department determines you to be operational under the Act and regulations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• There will be separate, locked, limited access areas for the storage of seeds, immature medical marijuana plants, medical marijuana plants, and medical marijuana that are expired, damaged, deteriorated, mislabeled, contaminated or recalled or whose containers or packaging have been opened or breached, until the seeds, immature medical marijuana plants, medical marijuana plants and medical marijuana are destroyed or otherwise disposed of, as required by § 1151.40 (relating to the management and disposal of medical marijuana waste).</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• All storage areas will be maintained in a clean and orderly condition and free from infestation by insects, rodents, birds, and pests.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• A separate and secure area for temporary storage of medical marijuana that is awaiting disposal will be established.</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>
PLEASE PROVIDE AN EXPLANATION OF ANY RESPONSES ABOVE THAT WERE ANSWERED AS A “NO” AND HOW YOU WILL MEET THESE REQUIREMENTS BY THE TIME THE DEPARTMENT DETERMINES YOU TO BE OPERATIONAL UNDER THE ACT AND REGULATIONS:

N/A

B. PLEASE DESCRIBE YOUR PLANS REGARDING THE STORAGE OF MEDICAL MARIJUANA WITHIN YOUR FACILITY:

DOH REDACTED
Section 13 – Packaging and Labeling of Medical Marijuana

A. Packaging Requirements

By checking “Yes” to any statement, you affirm that you will implement a quality control process to ensure that the packaging meets all of the following:

If you check “No” to any statement, you must state the reasoning for doing so at the end of this section. If issued a permit, you must be able to affirm each statement by the time the Department determines you to be operational under the Act and regulations.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each form of medical marijuana prepared for sale will be packaged and labeled at its facility. The original seal of a package may not be broken, except for quality control testing at an approved laboratory, for adverse loss investigations conducted by the Department, or by a dispensary that purchased the medical marijuana.</td>
<td>✗</td>
<td></td>
</tr>
<tr>
<td>Medical marijuana will be in a package that minimizes exposure to oxygen.</td>
<td>✗</td>
<td></td>
</tr>
</tbody>
</table>

The packaged medical marijuana will be all of the following:
Please provide an explanation of any responses above that were answered as a "No" and how you will meet these requirements by the time the department determines you to be operational under the act and regulations:

N/A

B. Labeling Requirements

By checking “Yes” to any statement, you affirm that the applicant will implement a quality control process to ensure that the label does not bear any of the following:

If you check “No” to any statement, you must state the reasoning for doing so at the end of this section. If issued a permit, you must be able to affirm each statement by the time the Department determines you to be operational under the Act and regulations.

- Any resemblance to the trademarked, characteristic or product-specialized packaging of any commercially available food or beverage product.

- Any statement, artwork or design that could reasonably lead an individual to believe that the package contains anything other than medical marijuana.

- Any seal, flag, crest, coat of arms, or other insignia that could reasonably mislead an individual to believe that the product has been endorsed, manufactured, or approved for use by any State, county or municipality or any agency thereof.

- Any cartoon, color scheme, image, graphic or feature that might make the package attractive to children.

Each process lot of medical marijuana will be identified with a unique identifier.

Prior written approval of the Department will be obtained regarding the content of any label to be affixed to a medical marijuana package.
By checking “Yes,” you affirm that each label will:

- Be easily readable.
- Be made of weather-resistant and tamper-resistant materials.
- Be conspicuously placed on the package.
- Include the name, address and permit number of the grower/processor.
- List the form, quantity and weight of medical marijuana included in the package.
- List the amount of individual doses contained within the package and the species and percentage of THC and CBD.
- Contain an identifier that is unique to a particular harvest batch of medical marijuana, including the number assigned to each harvest lot or process lot in the harvest batch.
- Include the date the medical marijuana was packaged.
- State the employee identification number of the employee preparing the package and packaging the medical marijuana.
- State the employee identification number of the employee shipping the package, if different than the employee preparing the package and packaging the medical marijuana.
- Contain the name and address of the dispensary to which the package is to be sold.
- List the date of expiration of the medical marijuana.
- Include instructions for proper storage of the medical marijuana in the package.
- Contain a warning that the medical marijuana must be kept in the original container in which it was dispensed.
- Contain a warning that unauthorized use is unlawful and will subject the purchaser to criminal penalties.
- Contain the following warning stating:

This product is for medicinal use only. Women should not consume during pregnancy or while breastfeeding except on the advice of the practitioner who issued the certification and, in the case of breastfeeding, the infant’s pediatrician. This product might impair the
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

**PLEASE PROVIDE AN EXPLANATION OF ANY RESPONSES ABOVE THAT WERE ANSWERED AS A “NO” AND HOW YOU WILL MEET THESE REQUIREMENTS BY THE TIME THE DEPARTMENT DETERMINES YOU TO BE OPERATIONAL UNDER THE ACT AND REGULATIONS:**

N/A

**C. PLEASE DESCRIBE YOUR PROCESS FOR CREATING AND MONITORING THE LABELING USED FOR MEDICAL MARIJUANA PRODUCTS:**

This section describes the processes and procedures the Applicant shall use to maintain the highest standards of health and safety at all times of operation, in accordance with all packaging and labeling requirements under the Act and regulations. In particular, the Applicant’s packaging and labeling practices are designed to comply with or exceed the requirements specified by §1151.34 of the Pennsylvania Code, as well as current best practices within the industry.

In general, the Manager of Packaging and Labeling will oversee the proper selection of packages for new products, as well as the creation of labels for new products. The Applicant will await written approval from the Department before moving forward with bulk package ordering and label creation for a new product.

This section provides detail into how the Applicant will operationalize these practices. The Packaging and Labeling Plan is arranged in the following sections:

- Packaging procedures
- Labeling procedures

While this section encompasses broader compliance commitments, it specifically includes the policies and procedures that will assure the following:

- Medical marijuana products prepared for sale by the Applicant will appropriately package and label each form of medical marijuana at its facility in accordance with §1151.34
- All medical marijuana products shall be prepared for sale to dispensaries in a sealed and properly labeled package
- A packaging and labeling employee shall inspect the label to ensure that the label contains all information required by §1151.34
- A packaging and labeling employee shall inspect the label to ensure that the label does not bear any content prohibited by §1151.34

**Oversight**

The Applicant’s advisor, CEO Vernon Jim Frazier, has reviewed these procedures. With 23 years of
experience in the food industry, Jim provides relevant insight and oversight. When the Applicant develops complete standard operating procedures prior to opening, Jim will review them for compliance, completeness, and efficiency. Jim will also be available to the Applicant for support once the business is up and running, in the event of any relevant questions or concerns.

On the operational side, as described in each section below, the Manager of Packaging and Labeling will oversee packaging and labeling approval. Packaging and labeling employees will perform a final verification before medical marijuana leaves the facility.

All label paperwork will be sent to the Manager of Packaging and Labeling for final review, to verify completion, and to store in the Applicant’s records. All label records will be stored following the Recordkeeping Plan (see Section 17) and stored for a minimum of 4 years.

**Updates to ensure continuous compliance**

The Director of Operations or designated packaging and labeling employee will monitor regulatory updates from the Department of Health. In the event that any relevant regulations change, the Director of Operations will be notified, and all checklists and procedures will be updated to ensure continuous compliance. Any updates to standard operating procedures or checklists will lead to a new version number.

The Manager of Processing and Extraction, with input from the Manager of Packaging and Labeling, is responsible for preparing summary reports on at least a quarterly basis, reviewing the implementation and compliance of the plan, procedures and checklists. These reports will be submitted to the Director of Operations, who will prepare semi-annual or annual reports for the Grower/Processor records and the Department of Health, if required.

Management will review the plans, procedures, and checklists on at least an annual basis. This may include a legal or regulatory analysis review to ensure compliance, if there have been significant changes to the regulations or policies.

In the event of any updates to checklists and procedures, the Director of Operations will coordinate with the Cultivation and Manager of Processing and Extraction to ensure all employees are trained on updated materials.

**Package and Label review training**

All employees will undertake initial training prior to beginning work at the Grower/Processor. This training period will include the mandatory two-hour training developed by the Department of Health, as well as detailed Applicant-specific training on compliance, diversion prevention, applicable laws, policies and procedures. This will specifically include the information that must be included on labels, and what may not be included on labels; as well as the requirements for packaging. Part of this training will include reviewing the Packaging and Labeling Checklists, ideally using actual product labels as examples.

Packaging and Labeling employees will also have access to an on-site physical copy of the Applicant’s standard operating procedures. All employees will receive annual training refresher courses, as well as ad hoc training when regulations, research, or procedures change. All employees are expected to undertake ASA’s Patient-Focused Certification training within one calendar year of employment. All
Training will be documented in the employee file for the employee, including the name of the trainer, the date of the training, and the duration and content of the training.

Training is covered in more detail in Section 9, Employee Qualifications, Description of Duties and Training.

All such training will be logged in employee files, and stored for 4 years beyond the duration of their employment, as described in the Recordkeeping Plan (Section 17).

Packaging procedures
By implementing the following multi-phase process, the Applicant will ensure that all medical marijuana product packages are in conformity with the requirements of §1151.34.

When the Director of Operations decides to begin manufacturing a new product, the Manager of Packaging and Labeling will be promptly notified so that he or she may begin researching what the best possible packaging is and how the Applicant can procure it.

Using applicable pharmaceutical and food safety standards, the Manager of Packaging and Labeling will determine what kind of container can safely contain whatever the new product is. The Manager of Packaging and Labeling will also ensure that any package that is selected for use has enough room to contain all of the required labels. Pursuant to §1151.34, the new package will minimize exposure to oxygen and be:

- Child-resistant
- Tamper proof or tamper-evident
- Light-resistant and opaque
- Resealable

Once the Manager of Packaging and Labeling has selected a package and overseen the creation of the accompanying label, a mock-up will be sent to the Department for final approval.

Labeling procedures
By implementing the following multi-phase process, the Applicant will ensure that all medical marijuana product labels are in conformity with the requirements of §1151.34.

At time of label creation
Whenever a new label is created, a packaging and labeling employee will use the Checklist for Producer Label Compliance. This checklist includes verifying all required elements on the label, in addition to reviewing that the packaging:

- Does not bear any resemblance to the trademarked, characteristic or product specialized packaging or any commercially available food or beverage product
- Does not include any statement, artwork, or design that could reasonably lead an individual to believe that the package contains anything other than medical marijuana
- Does not include any seal, flag, crest, coat of arms, or other insignia that could reasonably mislead an individual to believe that the product has been endorsed, manufactured or approved for use by any state, county, municipality or any agency thereof
- Does not contain any content that targets individuals under the age of 21, including but not limited to any cartoon, color scheme, image, graphic of feature that might make the package attractive to children
• Does not contain any false or misleading statements regarding health or physical benefits to the consumer

Once the new label has been created, the packaging and labeling employee will present the label to the Manager of Packaging and Labeling to review. The Director of Operations will then send the label to the Department. Once the Department gives the Applicant written approval to use the label, the Director of Operations will notify the Manager of Packaging and Labeling. In the event that the Department does not approve the label, the Manager of Packaging and Labeling will be notified and the entire process will be repeated until the Applicant has successfully created a label that is compliant with the standard promulgated by the Department.

At time of product order
The Director of Operations or a designated employee will coordinate with licensed dispensaries in the Commonwealth of Pennsylvania to evaluate medical marijuana and medical marijuana products. These conversations will take into consideration patient needs, qualifying conditions, applicable research, and product availability.

In the event that a Grower/Processor decides to move forward with an order for a new product, the Director of Operations or employee in charge of the order will send a sample product label for review. Once the label has been reviewed and approved by a Grower/Processor, the Director of Operations will notify the Manager of Packaging and Labeling, who will designate a packaging and labeling employee to print out a copy of the sample label and attach it to the Grower/Processor’s order.

At time of product shipping
When reviewing labels affixed on medical marijuana products that are going to be shipped to a Grower/Processor, a packaging and labeling employee will verify that all products are identified only by the following indicators:

• The name, address, and permit number of the grower/processor
• The form, quantity, and weight of medical marijuana included in the package
• The amount of individual doses contained within the package and the species and percentage of THC and CBD
• An identifier that is unique to a particular harvest batch of medical marijuana, including the number assigned to each harvest lot or process lot in the harvest batch
• Any other labeling required by the Department

A packaging and labeling employee will check that, if a package contains multiple labels, none of the information required by law is obstructed; and that the package seal has not been broken.

When the Applicant ships medical marijuana and medical marijuana products, Shipping and Receiving Personnel will follow the protocols listed in the Transportation Plan (Section 11). These protocols include completing the Checklist for Shipping Medical Marijuana.

Included in the Checklist for Shipping Medical Marijuana is a section that relates to verifying the manifest and inventory of the delivery. The Shipping and Receiving Personnel in charge of shipping the medical marijuana will use this section to visually compare the packaging and labeling of the products with the images attached to the order form, thereby verifying that the correct medical marijuana are being sent for delivery.
If there are unexpected discrepancies, the Manager of Packaging and Labeling will be notified immediately, and will make a decision as to whether the product may be shipped or not. If the Manager of Packaging and Labelings decides to ship the product, he or she will complete a new Checklist for Producer Label Compliance immediately. The label must be deemed compliant before the delivery team receives a receipt for the items delivered, and before the Grower/Processor Supervisor signs off on the Checklist for Receiving Medical Marijuana. All this must be documented in the Notes section of that Checklist, and called to the attention of the Director of Operations immediately after the delivery is completed.

In the event that labeling regulations change
At such a time that the labeling regulations change, causing an update to the Checklist for Producer Label Compliance, the Manager of Packaging and Labeling will arrange for employees to re-verify the compliance of all packages in the facility. This means preparing a new Checklist for each medical marijuana product.

Commitment to Compliance
The Applicant is committed to compliance.

Checklist: Producer Label Compliance
To be completed by packaging and labeling employee while inspecting a potential product’s packaging/label.
- Reviewer __________________________________________________
- Date of review ______________________________________________
- Name of product ____________________________________________
- Attach printout of the label being reviewed.

At a glance:
- Easily readable text
- Information conspicuously placed on package
- Made of weather-resistant material
- Made of tamper-resistant material
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

- Name of the grower/processor
- Address of the grower/processor
- Permit number of the grower/processor

**Medical information:**

- Form of medical marijuana
- Strain/species of medical marijuana
- Quantity of medical marijuana
- Number of individual doses
- % THC
- % CBD
- A listing of the non-medical marijuana ingredients
- Use by or expiration date ________________________________
- Packaging date ________________________________
- Instructions for proper storage

**Employee information:**

- Employee identification number of the employee preparing the package and packaging the medical marijuana
- Employee identification number of the employee shipping the package

**Warnings:**

- Contains the following warning: “This product is for medicinal use only. Women should not consume during pregnancy or while breastfeeding except on the advice of the practitioner who issued the certification and, in the case of breastfeeding, the infant’s pediatrician. This product might impair the ability to drive or operate heavy machinery. Keep out of reach of children. Only use as directed by a Doctor, how and where allowed by law. Always store this product in a secure, cool and dark location out of the reach of Children and Animals. This product must remain in the original container in which it was dispensed. The unauthorized use or possession of this product is unlawful and will subject the purchaser to criminal penalty. Dispose this container appropriately after use.”
- Contains a warning that the medical marijuana must be kept in the original container in which it was dispensed
- Contains a warning that unauthorized use is unlawful and will subject the purchaser or user to criminal penalties
- Any allergen warning required by law
  - Review ingredient list and verify all required allergens have associated warnings
  - In accordance with the Food Allergen Labeling and Consumer Protection Act of 2004, ingredients that are or may contain any of the following must be labeled:
    - Milk
    - Egg
    - Fish [species must be declared]
    - Crustacean shellfish [species must be declared]
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

- Tree nuts [with the specific type of nut declared]
- Wheat
- Peanuts
- Soybeans

The packaging/label does not bear the following elements:
Note any concerns and bring them to the attention of the Manager of Packaging and Labeling immediately.

- Any resemblance to the trademarked, characteristic or product specialized packaging or any commercially available food or beverage product

- Any statement, artwork, or design that could reasonably lead an individual to believe that the package contains anything other than medical marijuana

- Any seal, flag, crest, coat of arms, or other insignia that could reasonably mislead an individual to believe that the product has been endorsed, manufactured or approved for use by any state, county, municipality or any agency thereof

- Any content that targets individuals under the age of 21, including but not limited to any cartoon, color scheme, image, graphic of feature that might make the package attractive to children

- Any false or misleading statements regarding health or physical benefits to the consumer

Signatures
By signing below, the following employees certify that the checklist is true and correct.
Packaging and Labeling Employee ________________________________
Manager of Packaging and Labeling ________________________________

After completion of checklist
Copy this checklist and store a copy in accordance with the Recordkeeping Plan.
Send a copy of the checklist and image of the package and label to each of the Applicant’s Grower/Processor Supervisors.
Send the original checklist to the Director of Operations.

Section 14 – Inventory Management

<table>
<thead>
<tr>
<th>A. Electronic Tracking System</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>You acknowledge that you must use the electronic tracking system prescribed by the Department containing the requirements in section 701 of the Act (35 P.S. § 10231.701).</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

You acknowledge that an electronic tracking system that is approved by the Department will be deployed to log, verify, and monitor the receipt, use and sale of seeds, immature medical marijuana plants or medical marijuana plants, the funds received by a grower/processor for the sale of medical marijuana to another medical marijuana organization, the disposal of medical marijuana waste and the recall of defective medical marijuana.

<table>
<thead>
<tr>
<th>B. Inventory Management</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>By checking “Yes” to any statement, you affirm that your grower/processor facility will maintain an accounting of, and an identifying number for, the following inventory data in the electronic tracking system prescribed by the Department:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you check “No” to any statement, you must state the reasoning for doing so at the end of this section. If issued a permit, you must be able to affirm each statement by the time the Department determines you to be operational under the Act and regulations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The number, weight, and type of seeds.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The number of immature medical marijuana plants.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The number of medical marijuana plants.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The number of medical marijuana products ready for sale.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• The number of damaged, defective, expired, or contaminated seeds, immature medical marijuana plants, medical marijuana plants and medical marijuana products awaiting disposal.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• Inventory controls and procedures will be established for the conducting of monthly inventory reviews and annual comprehensive inventories of medical marijuana at the facility.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• Inventory reviews of medical marijuana plants in the process of growing and medical marijuana and medical marijuana products that are being stored for future sale shall be conducted monthly.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• Comprehensive inventories of seeds, immature medical marijuana plants, medical marijuana plants, medical marijuana and medical marijuana products shall be conducted at least annually.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>• A written or electronic record of the inventory reviews and comprehensive inventories must be created and maintained.</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

• The written or electronic record will include the date of the inventory, a summary of the inventory findings, and the employee identification numbers and titles or positions of the individuals who conducted the inventory.

Please provide an explanation of any responses above that were answered as a "No" and how you will meet these requirements by the time the department determines you to be operational under the Act and regulations:

N/A

C. Please describe your approach regarding the implementation of an inventory management process. This approach must also include a process that provides for the recall of medical marijuana and the management of medical marijuana product returns from a dispensary:

DOH REDACTED
### Section 15 – Management and Disposal of Medical Marijuana Waste

<table>
<thead>
<tr>
<th>A. Medical Marijuana Waste</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>By checking “Yes,” you affirm that medical marijuana waste will be stored, managed, and disposed of in accordance with § 1151.40 (relating to management and disposal of medical marijuana waste).</td>
<td>☑️</td>
<td>□</td>
</tr>
</tbody>
</table>

**B. PLEASE DETAIL YOUR PLAN FOR THE MANAGEMENT AND DISPOSAL OF MEDICAL MARIJUANA WASTE, IN ACCORDANCE WITH §§ 1151.22 (RELATING TO PLANS OF OPERATION) AND 1151.40 (RELATING TO MANAGEMENT AND DISPOSAL OF MEDICAL MARIJUANA WASTE):**
## Section 16 – Diversion Prevention

<table>
<thead>
<tr>
<th>A. Diversion Prevention</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>You acknowledge that you have the opportunity, only within 30 days from the date the</td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>Department determines you to be operational, to import medical marijuana seeds and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>immature medical marijuana plants.</td>
<td></td>
<td>■</td>
</tr>
</tbody>
</table>
B. PLEASE PROVIDE A SUMMARY OF THE PROCEDURES THAT YOU WILL IMPLEMENT AT THE PROPOSED GROWER/PROCESSOR FACILITY AND SITE FOR THE PREVENTION OF THE UNLAWFUL DIVERSION OF SEEDS, IMMATURE MEDICAL MARIJUANA PLANTS, MEDICAL MARIJUANA PLANTS, MEDICAL MARIJUANA AND MEDICAL MARIJUANA PRODUCTS, ALONG WITH THE PROCESS THAT WILL BE FOLLOWED WHEN EVIDENCE OF THEFT/DIVERSION IS IDENTIFIED:
Section 17 – Growing Practice

<table>
<thead>
<tr>
<th>A. Growing of Medical Marijuana</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>By checking “Yes” to any statement, you affirm that your facility will maintain the following practices for the growing of medical marijuana:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you check “No” to any statement, you must state the reasoning for doing so at the end of this section. If issued a permit, you must be able to affirm each statement by the time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>In accordance with § 1151.27 (requirements for growing and processing medical marijuana), only pesticides, fungicides or herbicides that are listed and published in the Pennsylvania Bulletin will be used.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>A log of all actions taken to detect pests or pathogens, and the measures taken for control, will be maintained.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>Visual inspections of growing plants and harvested plant material will be performed to ensure there is no visible mold, mildew, pests, rot or grey or black plant material that is greater than an acceptable level as determined by the Department.</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>A system to monitor, record, and regulate temperature, humidity, ventilation, lighting and water supply will be installed.</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>

PLEASE PROVIDE AN EXPLANATION OF ANY RESPONSES ABOVE THAT WERE ANSWERED AS A “NO” AND HOW YOU WILL MEET THESE REQUIREMENTS BY THE TIME THE DEPARTMENT DETERMINES YOU TO BE OPERATIONAL UNDER THE ACT AND REGULATIONS:

N/A

B. PLEASE PROVIDE A SUMMARY OF WHICH PESTICIDES, IF ANY, WILL BE USED IN THE GROWING PROCESS:

Application of Approved of Pesticides

In the event that the Applicant will require pesticides during the cultivation of medical marijuana plants, the Applicant shall perform all pest control actions in full accordance with the regulations promulgated in the Pennsylvania Pesticide Control Act of 1973 (3 P.S. § 111.21-112) and Chapter 1151.43 of the Pennsylvania Bulletin.

The Applicant will implement Standard Operating Procedures (SOPs) to ensure, in compliance with Chapter 1151.27 (e) of the Pennsylvania Bulletin, that Director of Cultivation and employees of the Company regularly inspect each plant for the presence of mold, mildew, pests, rot, and grey and black material beyond acceptable levels determined by the Department of Agriculture. Only by implementing rigorous quality control and assurance systems can the Applicant properly assess the condition of marijuana plant crops cultivated at the cultivation and processing facility. When determined necessary, the Applicant will proceed with the application of the appropriate pesticide(s).

All Director of Cultivation and employees of the Company responsible for applying pesticides to marijuana plants or crops will required by the Company to hold a current and valid Pennsylvania
Pesticide Applicator certificate. To ensure that no non-approved pesticides are used during the cultivation of medical marijuana plants, the Applicant will train all Company employees on standards detailed in the Pennsylvania Pesticide Control Act of 1973 and the Pennsylvania Bulletin. The Applicant will require each Director of Cultivation and every employee of the Company responsible for any action pertaining to the cultivation of marijuana plants, passes a test on these standards on an annual basis. In addition, various samples of select random batches/lots will be randomly selected by a person other than the COO or QA person, to test for banned pesticides on a quarterly basis.

The Applicant will document each action taken at the cultivation and processing facility requiring the use of pesticides. Pursuant to Chapter 1151.43 (c) of the Pennsylvania Bulletin, the Applicant will keep track of and record the following:

- Date of application
- Place of application
- Size of the area treated
- Quantity of each pesticide product used
- The United States Environmental Protection Agency product registration number (when applicable)
- Total amount of every pesticide used in pounds, ounces, gallons, or liters
- Dosage or rate of application for all pesticides used
- Names of the Director of Cultivation of the individual applying all pesticides
- Copies of labels for pesticides used, including Safety Data Sheets

A written record will be created by the Applicant within 24-hours of each application of pesticide that includes the aforementioned information. The Applicant will promulgate SOPs to ensure these records are maintained for a minimum of 4 years as outlined in Chapter 1151.43 (c) of the Pennsylvania Bulletin, and detailed in Section 22, Recordkeeping. All pesticide applications will be made with, or at a minimum with the authorization of two employees – each to witness and sign the documentation.

The Applicant will install specialized air cleaning technology that has been designed to reduce the threat of contamination and infestation, and to reduce the presence of bacterial and fungal particulates in the present airstream. The Trane Catalytic Air Cleaner uses a photo-catalytic oxidation process (PCO) that inhibits the biological processes of any microorganisms present. The Trane Catalytic Air Cleaner incorporates a titanium dioxide-treated media activated by UV-C energy to create a hydroxyl field that can oxidize and reduce microorganisms to a nonviable state, rendering them harmless to plant life. The specialized air cleaning system consists of three different types of technology that create a proven synergistic air purification process designed for optimal pest management:

**High Efficiency Filtration**

The first technology is a high efficiency filter rated at MERV 13, to reduce dust and larger biological contaminants. Minimum Efficiency Reporting Value (MERV) is a standard that rates the overall effectiveness of air filters. Higher value MERV rating equates to finer filtration,
meaning fewer dust particles and other airborne contaminants can pass through.

Ultraviolet Germicidal Radiation
The second technology uses ultraviolet germicidal radiation, or UVGI. UVGI uses high-intensity ultra violet light to eliminate mold, bacteria, and viruses, rendering them harmless to plants. Ultraviolet germicidal irradiation (UVGI) is a disinfection method that uses short-wavelength ultraviolet (UV-C) light to kill or inactivate microorganisms by destroying nucleic acids and disrupting their DNA, leaving them unable to perform vital cellular functions.

Photo Catalytic Oxidation
The third technology, which is the final stage of the air cleaning process, is photocatalytic oxidation (PCO). PCO utilizes ultraviolet photons that react with titanium dioxide embedded on a filtration surface, creating a new airborne purifying agent called hydroxyl radicals. These hydroxyl radicals are scientifically proven to have the ability to oxidize airborne biological threats while neutralizing harmful chemical contaminants. The result is a consistent air purification process that eliminates any potential threats to both humans and plants during the growing process. This will ensure that the integrity of cannabinoids produced will not have any pesticide residue or contaminants, and that the quality of the product will remain intact.

Director of Cultivation and employees will follow the manufacturer’s application for storage and disposal recommendations for all pesticide, fungicide, or herbicide products, and will follow all Commonwealth and Federal EPA Worker Protection Standard requirements when applying pesticides. The Grower/Processor Applicant and Director of Cultivation and employees will integrate pest management practices and techniques to help prevent, identify, and manage plant pest problems. Pesticide chemicals, and any other toxic materials, will be stored and used in a manner that protects against contamination of components, packaging components, in-process materials, medical marijuana, medical marijuana-derived products, or any contact surfaces within the Grower/Processor facility.

Integrated Pest Management
The Grower/Processor Applicant will use the following best practices for Integrated Pest Management prior to using any chemical pesticide product.

- **Biological control.** The Grower/Processor will use known forms of Biological Pest Control, the use of natural enemies—predators, parasites, pathogens, and competitors—to control pests and their damage.

- **Cultural controls.** The Grower/Processor will use known forms of cultural control practices to reduce pest establishment, reproduction, dispersal, and survival.

- **Mechanical and physical controls.** The Grower/Processor will use mechanical and physical controls to kill a pest directly, block pests out, or make the environment unsuitable for it using the Environmental Control System within the growing areas of the facility. This will include traps and other non-toxic methods to eradicate pests.

- **Airlock door control system.** The Applicant will create written standard operating procedures for contamination control within the facility. Airlocks and a door control system will be installed to reduce cross-contamination in clean areas. This will function as an intermediate area where contaminated air may be purged before a person enters the
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

clean area. The airlock door control system will be utilized to identify and prevent plant pathogen and pest problems.

- **Regular visual inspections.** The Applicant will create written standard operating procedures and pest management practices to identify and prevent plant pathogen pest problems based on daily scheduled visual inspections. Daily visual inspections will be performed to inspect all plants for signs of potential pests that may threaten the crop including but not limited to: aphids, gnats, mites, caterpillars, and other potential threatening pests and diseases.

- **Sticky cards in growing areas.** The Applicant will create standard written operating procedures and organic pest management practices where possible to prevent the use of any pesticides. The Applicant will implement sticky cards - glue-based traps used to catch insects and other pests by attracting them to the bright color - as a biological pest control measure.

- **Identification and recording of all pests and pathogens.** The Applicant will create written standard operating procedures and pest management practices to identify and prevent plant pathogen pest problems, and use the Electronic Tracking System for inputting descriptions of any type of harmful pest infestation. The Director of Cultivation and employees will record information related to these daily inspections, and provide descriptions and time infestation occurred.

The Grower/Processor Applicant will ensure that all Director of Cultivation and employees shall maintain a record of each application of a pesticide. The record will include the following information:

- The United States Environmental Protection Agency product registration number, except for products exempted under section 25 of the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C.A. § 136w)
- The total amount of every pesticide used in pounds, ounces, gallons, or liters applied to a treated area
- The dosage or rate of application of every pesticide used
- If applicable, the employee identification numbers of the individuals involved in making the pesticide and the permit or certification numbers of the individuals making or supervising the application
- Copies of pesticide labels and Safety Data Sheets for the pesticides used at the facility
- All records shall be completed within 24 hours of the completion of the application and maintained for a minimum of 4 years. In the event of an emergency, the records shall be made immediately available to the Department or its authorized employees and medical personnel or first responders in an emergency. A record shall be made available to the Department of Agriculture upon request

**Treatment and Quarantine Procedures**

Prior to any type of pesticide application, the Director of Cultivation will perform a set of thorough quality control checks based on written standard operating procedures in compliance
with the Pesticide Control Act and 7 Pa. Code Chapter 128. The Director of Cultivation will perform a quarantine process of all infected immature medical marijuana plants. This will involve a physical inspection process to first determine the presence of pests, pathogens, fungi, or viruses. If any pests are identified, all infected plants will removed. The area in which the pest was discovered will also be quarantined by isolating the area from the rest of the room, and ensuring no traffic is permitted in the area until treated.

**Pesticide Application Procedures**

The Grower/Processor Applicant will create written standard operating procedures (as set forth in the Pesticide Control Act and 7 Pa. Code Chapter 128) for this process to ensure that all Grower/Processor employees are in compliance with growing operations in ANY stage of the plants’ life cycle:

- Ensure compliance standards for safety, sanitation, and security when applying pesticides, fungicides, or herbicides on immature medical marijuana plants or medical marijuana plants at any time

- Education, training, and procedures on the equipment, supplies, instruments, and materials when applying pesticides, fungicides, or herbicides on immature medical marijuana plants or medical marijuana plants within the facility

- The proper methodology of the application of any pesticides, fungicides, and/or herbicides based on SOPs

- Prevention protocols before, during, and after the application of any pesticides, fungicides, and/or herbicides to avoid failure and hazards

- Pesticide chemicals shall be labeled and stored in a manner that prevents contamination of seeds, immature medical marijuana plants, medical marijuana plants, and medical marijuana, and in a manner that complies with other applicable laws and regulations

- When treating immature medical marijuana plants and/or medical marijuana plants for pests, employees shall always wear gloves, respirators, masks, and goggles as directed

- A pesticide application tracking form will be filled out, to completion, at the time of ANY and ALL pesticide/fungicide applications

- Signage will be displayed to alert staff to potential pesticide exposure and to limit traffic to the exposed areas no less than the required Restricted Entry Interval as indicated by product manufacturer requirements

- Perform a quality control check before moving plant to and from quarantined areas, and take a log of all actions taken to detect pests or pathogens, along with any measures taken for control

- Data collection will be recorded into the Electronic Track System provided by the Commonwealth for compliance, auditing, and referencing as a training document for all Director of Cultivation and employees

- Spraying procedures will include:
  - Turning off all lights and fans in room to be sprayed
o Putting on a new disposable protective suit
o Getting chemicals required for application and review MSDS (Material Safety Data Sheets) prior to application
o Preparing to spray immature medical marijuana plants or medical marijuana plants.
o Returning chemical(s) to appropriate storage areas when finished with application
o Posting signage to room being treated and in main corridors, intended to alert staff that room is being sprayed and entry to room is not permitted
o Treating all required immature medical marijuana plants and medical marijuana plants.
o Disposing of suit after spraying


The Applicant will implement Standard Operating Procedures (SOPs) based off of current Best Management Practices as established in states that have more developed medical marijuana programs. These SOPs will promote good growing and handling practices throughout the cultivation and processing phases of product development, and will be drafted in full compliance with §1151.27. The Grower/Processor Applicant has adopted and will implement standards for cultivation as promulgated by the American Herbal Pharmacopeia and the American Herbal Products Association.

These cultivation practices include SOPs intended to:

- Regulate the usage of pesticides, fungicides and herbicides such that only Commonwealth-approved products are administered to marijuana crops
- Maintain an accurate log of all actions taken to detect pests or pathogens, and all measures taken
- Ensure appropriate nutrient practices; including: the appropriate fertilizer or hydroponic solution type, appropriate rates of application, treatment and recycling of wastewater, and maintenance of an accurate log of all nutrients used during cultivation and production
- Require the visual inspection of all marijuana for the presence of mold, mildew, pests, rot, or grey or black plant material that is greater than an acceptable level as determined by the Department
- Prevent any operator employed by the Applicant from adding any additional active
ingredients or materials that alters its color, appearance, smell, taste, effect or weight of medical marijuana  
- Ensure that separate and secure areas for temporary storage of medical marijuana awaiting disposal is maintained at all times  
- Ensure that only parts of the medical marijuana plant that have been defined as appropriate in §1151.27(h)  
- Ensure that all medical marijuana plants are processed in a safe and sanitary manner as defined in §1151.27(i)  

Use of Pesticides, Fungicides and Herbicides

The Applicant, in compliance with §1151.27 (a), will only use chemicals that have been approved by the Department of Agriculture for use on medical marijuana plants, and that have been added subsequently by the Department and listed in the Pennsylvania Bulletin. This will include all pesticides, fungicides, or herbicides used during any phase of the marijuana cultivation of processing process. The Applicant will administer and use approved chemicals and/or additives in a manner that has been approved by the Department of Agriculture (§ 1151.27 (b)).

The Applicant will ensure that any Grower/Processor employees performing an application of potential pesticides will be a Pennsylvania Commonwealth-certified pesticide applicator. The Grower/Processor Applicant will only use products that are registered and approved by the Commonwealth of Pennsylvania in accordance with Chapter 128 issued under the Pennsylvania Pesticide Control Act of 1973 (3 P. S. §§111.21—111.61), and products that are listed and published in the Pennsylvania Bulletin.

Grower/Processor employees will follow the manufacturer’s application and storage recommendations, and disposal recommendations for the pesticide, fungicide, or herbicide product, and will follow all Commonwealth and Federal EPA Worker Protection Standard requirements when applying pesticides. Grower/Processor employees will comply with the pesticide manufacturer’s published re-entry interval time periods. The Grower/Processor Applicant will integrate pest management practices and techniques to help prevent, identify, and manage plant and pest problems, including:

- Regular visual inspection of plants and growing areas for presence of pests, cross-contamination, fungus, and foreign matter
- Organoleptic evaluation, such as: appearance, damage, size, color, odor, and taste
- Identify and record all pests or pathogens detected, and the measures taken for control

In accordance with §1151.27, Grower/Processor employees will regularly inspect each plant for the presence or absence of pests and disease. The Grower/Processor Applicant will ensure that any Grower/Processor employees performing an application of potential pesticides will be a Pennsylvania Commonwealth-certified pesticide applicator. The Grower/Processor Applicant will only use products that are registered and approved by the Commonwealth of Pennsylvania in accordance with Chapter 128 issued under the Pennsylvania Pesticide Control Act of 1973 (3 P. S. §§111.21—111.61) and products that are listed and published in the Pennsylvania Bulletin.
In accordance with §1151.27 (c), the Applicant will maintain a log of all actions taken to detect pests or pathogens, and will also document measures taken by the Applicant for controlling and/orremedying any unintended condition.

**Nutrients**

The Applicant is committed to implementing the appropriate nutrient practices for the indoor, hydroponic cultivation of medical marijuana plants. To this end, the Applicant will adopt Best Management Practices (BMPs) and Standard Operating Procedures (SOPS) from states with more developed marijuana industries; and more specifically, that are fully compliant with the standards promulgated in §1151.27 (d).

These practices will include the precise application and feeding of marijuana plants such that agronomic harmony is attained in order to maximize plant yield production; while at the same time, minimizing the number and quantity of inputs required to cultivate a marijuana plant from seed to flower:

- **Growing Medium:** All Breeding Plants will be grown in GRODAN Rockwool, a neutral hydroponic medium substrate that consists of spun volcanic rock, before being transferred into net pots for deep water cultivation. Each Rockwool block has an identical density, flexibility, and sturdiness, guaranteeing even distribution of the WC, EC, and pH to plants for vigorous and healthy plant growth.

- **Nutrients:** In accordance with §1151.27 (d), the Applicant will maintain records of the type and amounts of fertilizer, and any additional growth additive used during the cultivation of marijuana plants. The Applicant will implement SOPs to ensure the proper mixing, aeration and pH-levels of all nutrient solutions before their application. The Applicant will maintain an accurate log of all feedings and nutrient applications, detailing the time, date, and method of application; as well as, the potency of the nutrient solution (measured in PPM).

**Environmental Control:** The room will have an environmental control system that will maintain consistent temperatures of 78 degrees Fahrenheit, and humidity at 50% or below, at all times.

In a deep water culture hydroponic system, the roots of the marijuana plant are suspended in a solution of water and liquid nutrients. Air is introduced via forced induction into each root pot, allowing the plant to both breath and feed without the use of soil. The Applicant will maintain a strict nutrient recycling schedule:

- Each day, all nutrient baths being used in the cultivation of marijuana plants will be tested for pH-levels and nutrient potency.
- Once a week, all nutrient baths being used in the cultivation of marijuana plants will be supplemented with additional liquid nutrients.
- Every 14-days, all nutrient baths being used in the cultivation of marijuana plants will be drained and cleaned completely, allowing for the introduction of fresh nutrient solution.
- During the final two weeks of growth, all nutrient baths being used in the cultivation of marijuana plants will be drained completely and replaced with water that has undergone reverse-osmosis treatment.
• Once daily, during the vegetative phase of growth, the canopy of marijuana plants will be foliar fed using a nutrient solution that contains only Department-approved additives.

• As noted on the site plan included in Attachment D, and in accordance with §1151.26(a)(1)(viii), the Applicant will have a backup generator onsite for maintaining operation for at least 48 hours following a power outage. The specifications for this generator will be determined after finalizing equipment selection during site build-out to ensure sufficient capacity. At minimum, this generator will be able to power all security and surveillance equipment, as well as the following specific rooms: Mother Room, Veg/Flower Room, Dry Room, and Extraction Room. Typically no new extraction runs will be started during a power outage. The Applicant will also install an Uninterruptible Power Supply (UPS) for covering the transition to the generator, and will have sufficient power to cover at least 30 minutes. The average transition takes fewer than 10 minutes. Any modifications to equipment will lead the Director of Operations to reevaluate the required capacity of the generator and UPS.

Testing for Impurities

In accordance with § 1151.27(e), the Applicant will implement SOPs to ensure regular inspection of each plant for the presence or absence of pests and disease. In particular, the Applicant will inspect each plant for mold, mildew, pests, rot, or grey or black plant material that is greater than an acceptable level as determined by the Department.

The Applicant will not tolerate adulteration of any medical marijuana plant or product, and will implement SOPs to ensure that no additional active ingredients or materials are added to medical marijuana such that it alters the color, appearance, smell, taste, effect or weight of the medical marijuana.

Storage

There is potential for the cross-contamination of medical marijuana plants and products, and the Applicant will construct a separate storage area within the cultivation facility dedicated specifically for storage of medical marijuana plants or products that must be destroyed.

To prevent the culturing of additional bacteria or molds, the area will be climate-controlled and will feature an independent HVAC system that does not connect or network with additional airstreams in the facility.
Sanitation and Manufacturing Standards for Cultivation and Processing

The Applicant will implement SOPs to ensure that all marijuana plant matter processed at the facility is free of seeds and stems, dirt, sand, debris, and other foreign matter; and does not contain a level of mold, rot, or other fungus or bacterial diseases deemed unacceptable by the Department (§1151.27(h)).

All medical marijuana plant matter that tests positive—through either visual or laboratory inspection—for seeds, stems, dirt, sand, debris or other foreign matter including unacceptable levels of mold, rot, fungus, or bacterial diseases, will be designated for destruction and disposal. The Applicant will maintain SOPs to ensure proper destruction and disposal of all adulterated marijuana plants and/or products, and will train all Applicant employees responsible for handling marijuana plant matter on how to detect signs of contamination through organoleptic testing.

The Applicant will strictly maintain the sanitation of equipment that comes in contact with medical marijuana to prevent contamination in accordance with approved standard operating procedures (§ 1151.27(j)). The Director of Quality Control will develop and oversee sanitation protocols that meet or exceed the Center for Disease Control’s guidelines for Disinfection and Sterilization in Healthcare Facilities. These guidelines are the most appropriate basis for the Applicant’s protocols because, like those at healthcare facilities, patients who use products produced by the Applicant are vulnerable. The Director of Quality Control will provide support in developing and updating these disinfection and sterilization protocols.

For all equipment that comes in contact with medical marijuana, protocols will be made to meet standards required by the CDC guidelines for Spaulding’s Classification of Critical, because medical marijuana can come into contact with mucous membranes. These items require either sterilization or a cleaning process followed by high-level disinfection. The disinfection agent used will be appropriate and approved under the CDC guidelines for this classification.

All Grower/Processor Employees shall maintain the cleanliness of any area of the Grower/Processor building and all equipment used to store medical marijuana in compliance with current FDA standards:

- All countertops that will come into contact with medical marijuana will be stainless steel. Unlike wood, steel is not porous and does not allow mold, mildew, or debris to accumulate.
- Stainless steel countertops and packaging utensils will be sprayed down and/or soaked in an appropriate chemical sanitizing solution to prevent contamination.
- All employees involved with the handling and packaging of medical marijuana will wear proper lab coats, latex gloves, and hairnets.
- Personnel will also be required to wash hands and exposed areas of the arm before beginning work, before and between glove use, and after using a toilet facility.
• Gloves will be replaced after each pound of medical marijuana has been packaged, when beginning a new batch, or when beginning to package a different variety or shipment of product (to prevent cross-contamination), and every two hours.

• The Packaging and Labeling Employee will maintain a sanitation log with records retained for a minimum of 4 years.

The Applicant shall ensure that all Grower/Processor Employees follow the required sanitation standard operating procedures. This begins with clean room procedures to reduce contaminants that enter the packaging room, and includes verification by the Packaging and Labeling Employee that he or she does not appear to have any personal sickness that could contaminate the medical marijuana. It also includes following sanitation protocols on all equipment before start of use, between batches of medical marijuana products, and after finishing using the piece of equipment.

All Grower/Processor Employee shall maintain the cleanliness of any area of the Grower/Processor building, and all equipment used to store or display medical marijuana in compliance with current FDA standards:

• All countertops that will come into contact with medical marijuana will be stainless steel. Unlike wood, steel is not porous and does not allow mold, mildew, or debris to accumulate.

• Stainless steel countertops and packaging utensils will be sprayed down and/or soaked in an appropriate chemical sanitizing solution to prevent contamination.

• All employees involved with the handling and packaging of medical marijuana will wear proper lab coats, latex gloves, and hairnets.

• Personnel will be required to wash hands and exposed areas of the arm before beginning work, before and between glove use, and after using a toilet facility.

• Gloves will be replaced after each pound of medical marijuana has been packaged, before beginning to package a different variety or shipment of product (to prevent cross-contamination)

• The Packaging and Labeling Employee will maintain a sanitation log with records retained for a minimum of 4 years.

Grower/Processor Facility: System Controls

Environmental Control System

The Applicant will install the I-ponic Environmental Control System to monitor, record, and regulate temperature, humidity, ventilation, lighting, and water supply for the growing of medical marijuana plants. This system will ensure the maximum safety, quality, and output for the production of medical marijuana. The Applicant will promulgate standard operating procedures to ensure that the I-ponic system is properly recording environmental data at all times; and to ensure that all Applicant employees are trained properly in the areas of operation and maintenance for the system. Grower/Processor employees will attend regular professional training courses from the manufacturer, and follow all procedures for operating the environmental control system to maintain optimum and sanitary growing conditions.
HVAC System
Trane Catalytic Air Cleaners will be used to monitor, record, and regulate temperature, relative humidity, and airflow within all growing rooms in the Grower/Processor facility. The system will maintain ideal temperatures for growing medical marijuana between 75-78 degrees Fahrenheit. Humidity will be maintained 50% or below to prohibit any mold, mildew, or bacterial growth. The system will maintain appropriate air circulation within the facility. All rooms will be equipped with HEPA filtration to reduce contaminants and carbon filtration for odor control.

Lighting System
The I-ponic Environmental Control System will be used to monitor, record, and regulate lighting systems within all growing rooms in the Grower/Processor facility. The following lighting system has been selected for its superior performance:

- LED lighting systems:
  - PL Light 1000/600 HSE LP2 with Heliospectra tunable LED light
- Lighting: Breeding Plants will be placed under the latest LED lighting technology to reduce energy costs, vigorously increase growth, and create new starter plants. Lighting schedules will be determined by marijuana plants phase of development.
  - Lights will be left on for a period of 18 hours, and then off for a period of 6 hours during the vegetative phase of growth.
  - Lights will be switched to a 12/12 schedule; 12-hours of light, 12-hours of dark to initiate the flowering phase of marijuana plant growth. Lights will remain on a 12/12 schedule for the remained of plant development (approximately 8-12 weeks).

Carbon Dioxide Enrichment System
The iPonic Commercial Environmental Grow Room Controller will be used to monitor, record, and regulate carbon dioxide enrichment systems within all growing rooms in the Grower/Processor facility. Carbon dioxide enrichment will be used during the vegetative and flowering processes to ensure maximum yield and resin production. Carbon dioxide tanks will be operated and stored in the Grower/Processor facility in accordance with Federal OSHA standards 1901.101(a), 1901.101(b), and 1901.101(c), related to compressed gases.

Irrigation System
The Current Culture Recirculating Deep Water Culture System will be used to monitor, record, and regulate irrigation systems within all growing rooms in the Grower/Processor facility. The Applicant’s Zero Waste Policy will have a strong focus on water quality and water retention to have the least environmental impact. The Applicant can minimize waste and give the plant exactly what it needs, when it needs it during its life cycle:

- A manifold with a series of plant containers are connected to a pump.
The pump is placed into a commercial reservoir with water and mixed plant hydroponic nutrient solution.

The hydroponic nutrient solution is re-circulated through the series of plant containers and directly being absorbed into the plants’ roots.

The pump is connected to the environmental control system with a set of controls.

The watering times are programmed and automated by the environmental control system to feed the plants on an accurate schedule, providing consistency and vigorous plant growth.

The Applicant will establish written standard operating procedures as set forth in §1151.27 (D)(2) to promote good growing and handling practices that will include all aspects of irrigation and water usage at the facility.

- All Grower/Processor employees will be trained on proper handling and storage of water and irrigation equipment with a focus on avoiding contamination prevention procedures.
- Grower/Processor employees will not use public drains for excess nutrients or grey water without confirming with the Director of Cultivation the disposal is in accordance with applicable laws and regulations.
- An automated irrigation system will be used and employees will be trained to mitigate for equipment failure and operations of the irrigation systems.
- Water inputs used from an outside source will be tested for quality.
- Irrigation equipment will be professionally maintained per manufacturer’s recommendations.
- Irrigation equipment will be inspected and monitored to ensure accuracy of all water applications.
- Director of Cultivations and Employees will check for signs of water quality changes including build-up of calcium, magnesium, sulfate, iron, or manganese, and increased levels of chloride or sulfides.

Fertilization System

The Current Culture Recirculating Deep Water Culture System will be used to monitor, record, and regulate the feeding schedules of medical marijuana plants and will include an automated nutrient fertilization system that will feed plants on a continuous basis. The Applicant will only use hydroponic nutrient solutions that are approved and registered in the Commonwealth of Pennsylvania and that comply with the provisions of Chapter 73 under the Pennsylvania Fertilizer Soil Conditioner and Plant Growth Substance Law (3 P. S. § § 68.1—68.23).

The Applicant will create written standard operating procedures as set forth in §1151.27 (A) to ensure that all Director of Cultivations and Employees are in compliance with fertilization requirements associated with every stage of the plant’s life cycle:

- Ensure compliance standards are met for the hydroponic nutrient solutions intended for use.
- Follow all of the manufacturer’s recommendations regarding the products.
- Education and training on the hydroponic nutrient solutions and irrigation system
- Ensure fertilization procedures have little/no adverse impact on environment
- Ensure all production goes according to schedule
- Prevention protocols when using fertilizers to avoid failure and hazards
- Perform daily quality control checks on all hydroponic nutrient solution products
- Data collection will be recorded into the Electronic Track System provided by the Commonwealth for compliance, auditing, and referencing as a training document for all Director of Cultivations and Employees

**Grower/Processor Facility: Areas of Operation**

- **Growing Medium:** Mother Plants will be grown in GRODAN Rockwool, a sterile hydroponic medium substrate that consists of spun volcanic rock. Each Rockwool block has an identical density, flexibility, and sturdiness, guaranteeing even distribution of the WC, EC, and pH to plants for vigorous and healthy plant growth.

- **Environmental Control:** The environmental control system will maintain consistent temperatures of 75-78 degrees Fahrenheit and humidity at 50% or below. The room will have adequate positive pressure and airflow to help eliminate any plant stress, pathogens, or mold from forming. Carbon filtration will be used for odor control, and an airlock system will be used to prevent any contamination from the outside.

- **Lighting:** Mother Plants will be placed under the latest LED lighting technology to reduce energy costs and to vigorously increase growth and new starter plants.
Growing Medium: Vegetative and flowering plants will be grown and rooted in GRODAN Rockwool, a sterile hydroponic medium substrate that consists of spun volcanic rock. Each Rockwool block has an identical density, flexibility, and sturdiness, guaranteeing even distribution of the WC, EC, and pH to plants for vigorous and healthy plant growth.

Environmental Control: The environmental control system will maintain consistent temperatures of 75-78 degrees Fahrenheit and humidity at 50% or below. The room will have adequate positive pressure and airflow to help eliminate any plant stress, pathogens, or mold from forming. Carbon filtration will be used for odor control, and an airlock system will be used to prevent any contamination from the outside.

Lighting: All vegetative plants will be placed under 1000 watt Double Ended Metal Halide lighting technology to encourage vigorous vegetative growth.

Drying Room

During the Drying process, Director of Cultivation visually inspect the flowers in the drying rooms daily, verifying the physical contents of the drying room, and checking on the progress of the flowers through the drying cycle. During the drying period, the cannabinoids and terpenes will isomerize to create new polyterpenes that will give the medical marijuana its final taste, smell, and potency. When the plants are dry, the plant material is placed into another transport bin designed for dried plant flowers and moved to the Trimming Room. The mature medical marijuana plants are ready to be manicured and grinded down to a fine consistency for the marijuana oil to be extracted. A randomly selected amount of each dried batch is sent to a Commonwealth-certified and licensed laboratory to test for quality control and ensure it meets the required standards as set forth in the Pennsylvania Bulletin.

The Applicant will create written operating procedures as set forth in Pennsylvania Bulletin for this process to ensure that all Grower/Processor employees are in compliance with growing operations at this stage of the plant’s lifecycle:

- All drying/curing operations will be performed in operations zones with full surveillance camera coverage in accordance with security policies and procedures.
- Drying/curing areas will be maintained to ensure sufficient ventilation for airborne moisture to escape, providing adequate air circulation throughout the drying area and sufficient odor mitigation.
Harvested material will be placed or racked on clean food-grade surfaces that afford adequate air circulation.

If heaters or other sources of artificially generated heat are used in the drying operation, adequate ventilation of the heating equipment will be provided and only fuels that will not result in hazardous combustion emissions coming into contact with the crop and thereby contaminating the material will be utilized.

If using mechanical drying equipment, all manufacturer instructions and established operating procedures will be followed to ensure the quality of the plant material is retained.

Trim Room

After the mature medical marijuana plants have been trimmed and the plant material is separated, they are moved into a separate grinding room and placed inside a large automated grinding machine. The grinding room will be equipped with a dust collection system to ensure that dust particles within the room do not exceed regulatory standards, as set forth in Combustible Dusts OSHA regulations 3371-08. Once the mature medical marijuana plants are ground to a finer consistency, the product is placed into new transport bins and moved to the Botanical Extractions Room (See Section 19 – Processing and Extraction).

The Applicant will establish written standard operating procedures as set forth in the Pennsylvania Bulletin for the trimming and grinding of medical marijuana plants. Processed mature medical marijuana plants that are fully dried and ready to be trimmed and ground will be:

- Well cured and free of any seeds and stems
- Free of dirt, sand, debris, and other foreign matter
- Free of contamination by pests, mold, rot, fungus, and other bacterial diseases;
- Contain a level of mold, rot, or other fungus or bacterial disease deemed unacceptable to the Department
- Prepared and handled on food-grade stainless steel tables
- Hand trim and grind down all plant materials used for extractions to a finer consistency
- Work in a sterile environment in accordance with all Pennsylvania Food Service Regulation standards, as well as the standards promulgated by the Center for Disease Control and Prevention
- Practice good sanitation and health habits, such as adequate handwashing, and reporting any illness directly to a Director of Cultivation before arriving at the Growing Facility
Storage Room

The Applicant takes seriously the threat of contamination and acknowledges how essential maintaining cleanliness and sanitation are to the marijuana cultivation and production process.

In compliance with §1151.27(g), all marijuana plant and product designated for disposal will be maintained in a separate and secure room, segregated from acceptable finished marijuana plant and product. This secure quarantine room will feature its own HVAC system to mitigate the threat of airborne contamination to other areas of the facility. ISO Standards 14644-1:2015 will be implemented for monitoring, controlling and reducing airborne particle concentration.

Section 18 – Nutrient and Additive Practices

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<thead>
<tr>
<th>A. Nutrient and Growth Additive Practices</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>By checking “Yes” to any statement, you affirm that your facility will maintain the following medical marijuana nutrient and growth processes:</td>
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<td>If you check “No” to any statement, you must state the reasoning for doing so at the end of this section. If issued a permit, you must be able to affirm each statement by the time the Department determines you to be operational under the Act and regulations.</td>
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<td>• Appropriate nutrient practices will be used.</td>
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<td>• A fertilizer or hydroponic solution must be of a type, formulation and at a rate to support the healthy growth of plants.</td>
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<tr>
<td>• Records of the type and amounts of fertilizer and any growth additives used will</td>
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</table>
No additional active ingredients or materials will be added to the medical marijuana that alters the color, appearance, smell, taste, effect or weight of the medical marijuana, unless the grower/processor has first obtained the prior written approval of the Department.

Excipients will be pharmaceutical grade, unless otherwise approved by the Department.

Please provide an explanation of any responses above that were answered as a “No” and how you will meet these requirements by the time the department determines you to be operational under the Act and regulations:

N/A

B. Please provide details of all nutrient and growth additives that will be utilized at your facility:

Application and Usage of Approved Substances
The Grower/Processor Applicant will establish Standard Operating Procedures (SOPs) to promote good growing practices that include the application of all fertilizers and nutrient solutions used during the cultivation of marijuana plants.

Administering of Nutrients
The Grower/Processor Applicant will adopt a professional nutrient management plan that will ensure healthy and vigorous growth of medical marijuana plants. The nutrient management plan will be in accordance with the Commonwealth of Pennsylvania’s current requirements and will be prepared by a certified nutrient consultant in compliance with all regulations set forth in §1151.27(d), pertaining to the growing of immature medical marijuana plants and medical marijuana plants.

The Applicant is committed to implementing the appropriate nutrient practices for the indoor, hydroponic cultivation of medical marijuana plants. To this end, the Applicant will adopt Best Management Practices (BMPs) and Standard Operating Procedures (SOPs) from states with more developed marijuana industries; adapting them so that they are fully compliant with the standards promulgated in §1151.27 (d).

These practices will include the precise application and feeding of marijuana plants such that agronomic harmony is attained to maximize plant yield production; while at the same time, minimizing the number and quantity of inputs required to cultivate a marijuana plant from seed to flower:
• **Growing Medium:** All Breeding Plants will be grown in GRODAN Rockwool, a sterile hydroponic medium substrate that consists of spun volcanic rock. Each Rockwool block has an identical density, flexibility, and sturdiness, guaranteeing even distribution of the WC, EC, and pH to plants for vigorous and healthy plant growth.

• **Nutrients:** In accordance with § 1151.27 (d), the Applicant will maintain records of the type and amounts of fertilizer, and any additional growth additive used during the cultivation of marijuana plants. Pending approval from the Department, the Applicant will utilize the Soul Synthetics Soilless line of liquid nutrients produced by Aurora Innovations. This line of nutrients is organic based, but is designed to be used in strictly hydroponic situations. The Applicant will implement SOPs to ensure the proper mixing, aeration and pH-levels of all nutrient solutions before their application. Additionally, the Applicant will maintain an accurate log of all feedings and nutrient applications, detailing the time, date, and method of application; as well as the potency of the nutrient solution (measured in PPM).

• **Environmental Control:** The room will have an environmental control system that will maintain consistent temperatures of 75-78 degrees Fahrenheit and humidity at 50% or below at all times. The room will have adequate positive pressure and airflow to help eliminate any plant stress, pathogens, or mold from forming. Carbon filtration will be used for odor control, and an airlock system will be used to prevent any contamination from the outside.

In a deep water culture hydroponic system, the roots of the marijuana plant are suspended in a solution of water and liquid nutrients. Air is introduced via forced induction into each root pot, allowing the plant to both breathe and feed without the use of soil.

The Applicant will maintain a strict nutrient recycling schedule:
- Each day, all nutrient baths being used in the cultivation of marijuana plants will be tested for pH-levels and nutrient potency.
- Once a week, all nutrient baths being used in the cultivation of marijuana plants will be supplemented with additional liquid nutrients.
- Every 14-days, all nutrient baths being used in the cultivation of marijuana plants will be drained completely, allowing for the introduction of fresh nutrient solution.
- During the final two weeks of growth, all nutrient baths being used in the cultivation of marijuana plants will be drained completely and replaced with water that has undergone reverse-osmosis treatment.
- Once daily, during the vegetative phase of growth, the underside of each canopy of marijuana plant will be foliar fed using a nutrient solution that contains only Department-approved additives.

Furthermore, the Applicant will create written operating procedures to ensure that all Director of Cultivations and Employees are in compliance with the hydroponic nutrient solution requirements associated with every stage of the plant’s lifecycle:
- Ensure compliance standards are met for safety, sanitation, and security of the
hydroponic nutrient solution products intended for use

- Follow all of the manufacturer’s recommendations regarding the products
- Education and training on the hydroponic nutrient solution products and feeding schedules associated with each product based on manufacturer’s recommendations
- Education and training on the automated fertilizer and irrigation system
- Ensure fertilization procedures do not have adverse impact on environment
- Ensure that no additional active ingredients or materials will be added to the medical marijuana that alters the color, appearance, smell, taste, effect, or weight of the medical marijuana without prior written approval from the Department
- Ensure that all fertilization of plants goes according to manufacturer’s recommended feeding schedules
- Ensure that all fertilizer or hydroponic nutrient solutions used are of a type, formulation, and are applied at a rate to support the healthy growth of plants
- Prevention protocols when using hydroponic nutrient solutions to avoid failure and hazards
- Perform a quality control check on all hydroponic nutrient solution products and take a log of all actions taken to detect any discrepancies in the nutrient formulas, fertilization or mechanical processes with the Environmental Control System
- Data collection will be recorded into the Electronic Tracking System mandated by the Commonwealth for compliance, auditing, and referencing as a training document for all Grower/Processor employees

In accordance with §1151.27(d), the Applicant will maintain records of the type and amounts of fertilizer, and any additional growth additive used during the cultivation of marijuana plants.

The Applicant will be using Cultured Solutions® manufactured and created by Current Culture H2O, a professional hydroponic equipment and solutions Applicant. Cultured Solutions® is a premium hydroponic nutrient formulation that is a proven production system for growing medical marijuana plants. Cultured Solutions® is designed for high-performance hydroponic applications including: Deep Water Culture, RDWC, Hyper-aerated RDWC, Soilless, Coco and Rockwool, and is registered in all 50 states for use. The Applicant will be using the full line of Cultured Solutions® products with its Recirculating Deep Water Culture Hydroponic System for growing medical marijuana plants:

**MANUFACTURER:** Current Culture H2O™ 4383 N. Knoll, Suite 104 Fresno, CA 93722 Phone: 559-266-4769, Fax: 559-486-4769 CHEMTREC PHONE: 800-424-9300

The Applicant will implement SOPs to ensure the proper mixing, aeration, and pH-levels of all nutrient solutions before their application. Additionally, the Applicant will maintain an accurate log of all feedings and nutrient applications, detailing the time, date, and method of application; as well as, the potency of the nutrient solution (measured in PPM).

**Pest Control, Pesticides, Fungicides, and Herbicides**

As described in detail in Section 17, Pesticides, the Applicant will establish a facility with advanced filtration systems that will minimize the need for pesticides, fungicides, and
herbicides. In the event that such materials are needed, in compliance with ordinances promulgated by the Department of Agriculture in §1151.27 (a) & (b), the Applicant will only administer pesticides, fungicides, and herbicides that are approved by the Department for use on medical marijuana plants. Additionally, the Applicant will only administer approved additives in ways that have been approved of by the Department.

Pursuant to §1151.27(f), no additional active ingredients or materials will be used by the Applicant that alter the color, appearance, smell, taste, effect, or weight of medical marijuana cultivated at the cultivation and processing facility. The Applicant will train all employees responsible for medical marijuana plant maintenance on the proper application of the following chemical compounds for pest control:

- Neem oil
- Ethyl alcohol
- Pyrethrin

The Applicant will implement and maintain SOPs to ensure that any Grower/Processor employee performing an application of Department-approved pesticides will be a current, Pennsylvania Commonwealth-certified pesticide applicator.

Grower/Processor employees will follow all manufacturers’ application and storage recommendations, and disposal recommendations for all Department-approved nutrients, nutrient solutions, pesticides, fungicides, or herbicides used, and will follow all Commonwealth and Federal EPA Worker Protection Standard requirements during application periods. Grower/Processor employees will comply with all pesticide manufacturers’ recommended re-entry interval time periods before re-entering the any cultivation room that has been treated with a pesticide. Additionally, the Applicant will provide all Employees with properly fitted and functioning gas masks, and provide the training for the proper usage and maintenance of the aforementioned devices.

The Applicant will integrate pest management practices and techniques to help prevent, identify, and manage plant and pest problems, including:

- Regular visual inspection of plants and growing areas for the presence of pests, cross-contamination, fungus, and foreign matter
- Organoleptic evaluation, such as: appearance, damage, size, color, odor, and taste
- Identify and record all pests or pathogens detected and the measures taken for control

Foliar Feeding

Foliar feeding is an effective way of supplementing any marijuana plants that have become deficient in any specific nutrient or nutrient combination. Foliar feeding can also be implemented as part of routine feeding/nutrient cycle to enhance the vitality and growth of marijuana plants.

In compliance with §1151.27(a) & (b), the Applicant will not administer any pesticides, fungicides, or herbicides that have not been approved by the Department for use on marijuana plants. All foliar feeding formulas will be composed of approved of nutrients and additives.

The Applicant will implement SOPs to ensure the proper foliar feeding of all marijuana plants
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

that are in the germination and vegetative phases of development. Plants in the flowering phase of development will not be foliar fed. The Applicant will train each cultivator employed by the Applicant on the proper foliar feeding techniques and frequency of application:

- Only plants in the germination and vegetative phases of growth will be foliar fed
- All marijuana plants in the germination and vegetative phases of growth will be foliar fed once per day
- This feeding is to occur immediately as the lights go on
- Spraying application should target the underside of the leaves, where the marijuana plant stomata is located
- No additional areas of the plant are to be foliar fed

Enhancing the Grow Room with Carbon Dioxide

The iPonic Commercial Environmental Grow Room Controller is described in more detail in Section 22, Recordkeeping, will be used to monitor, record, and regulate carbon dioxide enrichment systems (and other environmental control factors) within all growing rooms in the facility. Carbon dioxide enrichment will be used during the vegetative and flowering phases of growth to ensure maximum yield and resin production. Carbon dioxide tanks will be operated and stored in the facility in accordance with Federal OSHA standards §§1901.101(a), 1901.101(b), and 1901.101(c), related to compressed gases.

Water Treatment

The Applicant will focus on water conservation as a primary goal of operations. The Director of Cultivation will test the water source quarterly and when PPM/pH readings change significantly. Testing will identify pathogenic microbes that may be present in water supplies such as heavy metals, pesticide residues, or other contaminants. All water used in the facility will, at a minimum, meet EPA and Human Health Standards for water quality. The following steps will be implemented to ensure water quality:

- All employees will be trained on the proper handling and storage of water with a focus on avoiding contamination.
- Water and hydroponic nutrient solutions will not sit in the open environment for longer than 4 hours.
- No hydroponic nutrient solutions will be disposed into a public drain without confirming the disposal is in accordance with applicable laws with the manufacturer’s recommendations.
- All water equipment will be sanitized regularly.
- The Director of Cultivation will keep onsite a record of water quality testing and data collection will be recorded into the Electronic Track System mandated by the Commonwealth for compliance, auditing, and referencing as a training document for all Director of Cultivations and Employees.

Nutrient Management Plan

The Applicant will, as part of standard operating procedures, adopt and implement a nutrient
management plan prepared by a certified management consultant.

This plan will include, at a minimum, the following set of best practices and guidelines (§1151.27(d)):

- All nutrients used by the Applicant will be appropriate for use in food production and all excipients will be of pharmaceutical grade
- The Grower/Processor employee will follow the manufacturer’s application, storage, and disposal recommendations for all fertilizer products
- All crop applications will follow established spraying and feeding protocols
- Records of the type and amount of fertilizer will be maintained in the Commonwealth-mandated Electronic Tracking System

The plan will also include the use of fertilized or hydroponic nutrient solution of a type, formulation, and at a rate to support healthy growth of medical marijuana for each batch and lot. Hydroponic nutrient solutions will be applied to immature medical marijuana plants and medical marijuana plants in an accurately precise dosage methodology to avoid over-feeding and burning of the leaves. All Director of Cultivations or Employees will only utilize fertilizers that are rated at a pharmaceutical quality, and applied at necessary phases in the grow cycle. All hydroponic nutrient solutions will be applied to plants and recorded in the Electronic Tracking System for proper recordkeeping.
Macronutrients and Micronutrients for growing medical marijuana plants

The Grower/Processor Applicant will use a wide array of hydroponic nutrient solutions that will be of pharmaceutical grade and specially formulated for growing medical marijuana plants. This will include hydroponic nutrient solutions that are rich in Nitrogen, Phosphorus, and Potassium (NPK), and the following micronutrients:

- Calcium (Ca)
- Magnesium (M)
- Sulfur (S)
- Boron (B)
- Chlorine (Cl)
- Copper (Cu)
- Iron (Fe)
- Manganese (Mn)
- Molybdenum (Mo)
- Zinc (Zn)

The following are types of hydroponic nutrient solutions besides base fertilizer compounds that are to be used in the process of growing medical marijuana plants:

**Hypochlorous Acid**

Applied as needed.

Hypochlorous acid (HClO) is a weak acid that forms when chlorine dissolves in water, and partially dissociates, forming ClO-. HClO and ClO- are oxidizers, and the primary disinfection agents of chlorine solutions.

**Hydroponic Nutrient Solutions**

The Applicant will be using Cultured Solutions® manufactured and created by Current Culture H2O, a professional hydroponic equipment and solutions Applicant. Cultured Solutions® is a premium hydroponic nutrient formulation that is a proven production system for growing medical marijuana plants. Cultured Solutions® is designed for high-performance hydroponic applications including; Deep Water Culture, RDWC, Hyper-aerated RDWC, Soilless, Coco and Rockwool, and is registered in all 50 states for use. The Applicant will be using the full line of Cultured Solutions® products to use with its Recirculating Deep Water Culture Hydroponic System for growing its medical marijuana plants:
The Applicant will create written standard operating procedures for this product to ensure that all Grower/Processor employees are in compliance with the use of the hydroponic nutrient solution and its applications. The following is a list of the hydroponic nutrient solutions that will be used the growing of medical marijuana plants.

**UC Roots**
Applied during early vegetative phase of plant growth.

Cultured Solutions® UC ROOTS is a multipurpose root zone optimizer that uses proprietary chemistry to aid in mineral descaling and the removal of potentially harmful biofilms in nutrient reservoirs. By reducing the potential habitat for plant pathogens, UC ROOTS has been shown to aid in root development.

Derived from: Hypochlorous Acid, Inert Ingredients

Benefits:
- Promotes thick, bright white roots
- Eliminates risk of root rot
- Increases ORP, creating an environment unsuitable for pathogen and fungi development
- Dissolves mineral buildups, reducing the risk of nutrient lockout
- Maintains a clean and clear nutrient solution
- No risk of root burn
- Neutral pH of 6.8, NO pH buffers necessary
- Reduces labor and decreases equipment maintenance

**COCO Cal**
Cultured Solutions® COCO Cal is a concentrated blend of readily available Calcium and Magnesium. It is formulated to assist fast growing plants by preventing secondary nutrient deficiencies. COCO CAL helps optimize plant nutrition and enhances plant growth and development. It is designed for rapidly growing plants in all growth and bloom phases.

Derived from: Calcium Nitrate, Calcium Sulfate, Magnesium Nitrate, Iron EDTA.

**NPK: 2-0-0**
Applied as needed.

Benefits:
- Readily available calcium and magnesium
- Prevents secondary deficiencies
- Supplements vital plant nutrition

**Veg A & B**
Two-Part Premium Vegetative Nutrient Formulation.
Applied during flowering phase of growth.

Cultured Solutions® Veg A & B combines all necessary macro and micro nutrients in a pH stable, chelated form, ideal for high performance hydro and water culture applications. Veg A & B offers plants the minerals needed in ideal ratios to ensure optimal uptake of the nutrient solution is achieved.

**Veg A** – Derived from: Ammonium Calcium Nitrate, Potassium Nitrate, Iron EDTA, Copper EDTA, Manganese EDTA, Sodium Molybdate, Sodium Borate, Zinc EDTA - **NPK: 5 - 0 - 0.3**

**Veg B** – Derived from: Potassium Phosphate, Potassium Nitrate, Magnesium Sulfate - **NPK: 1.3 - 2 - 5.9**

**Benefits:**
- Vegetative Formula
- PH Stable
- Highly Concentrated
- Used to create lush vegetation and rapid growth

**Bloom A & B**

2-Part Premium Vegetative Nutrient Formulation.

Applied during flowering phase of growth.

Cultured Solutions® Bloom A & B is a full spectrum, mineral based nutrient which contains all the elements necessary to produce prolific results. With a properly balanced dose of minerals in solution, Bloom A & B affords plants just what they need to thrive as they push forward into the reproductive stage.

**Bloom A** – Derived from: Ammonium Calcium Nitrate, Potassium Nitrate, Iron EDTA, Copper EDTA, Manganese EDTA, Sodium Molybdate, Sodium Borate, Zinc EDTA - **NPK: 3.7 - 0 – 3**

**Bloom B** – Derived from: Potassium Phosphate, Potassium Nitrate, Magnesium Sulfate - **NPK: 0.9 – 4.8 – 6.2**

**Benefits:**
- Bloom formula
- Ph stable
- Highly concentrated
- Used to create rapid flower formation and resin production

**Bud Booster - Early**

Applied during early flower onset.

Cultured Solutions® Bud Booster – Early is specifically formulated to aid in the development of flowering sites and is fortified with added Nitrogen and Magnesium to promote peak performance. Providing ample nitrogen during the early elongation stage of bloom encourages
plants to reach their full genetic potential.

Derived from: Ammonium Phosphate, Potassium Phosphate, Magnesium Sulfate, Potassium Nitrate

**NPK: 1-3.7-2.6**

Applied as needed.

Benefits:
- For use in early flower
- PH stable
- Highly concentrated
- Jumpstarts flower sites early for robust yield setting

**Bud Booster - Mid**

Applied during flower formation.

Cultured Solutions® Bud Booster – Mid incorporates high levels of Phosphorus and Potassium to provide your plants with the minerals needed during primary flower periods. The zero Nitrogen bloom booster also supplies Sulfur and Magnesium to assist in the synthesis of essential amino acids. This encourages the production of complex sugars and starches, crucial during fruit and flower formation.

Derived from: Potassium Sulfate, Potassium Phosphate, Magnesium Sulfate

**NPK: 0-4.5-4.8**

Applied during mid-flowering stage.

Benefits:
- For use in mid stage flower
- Ph Stable
- Highly concentrated
- Aids significantly in flower and resin production

**Bud Booster - Late**

Applied during final ripening.

Cultured Solutions® Bud Booster – Late is an exceptionally pure, powdered nutrient, specifically formulated for the ripening period of the bloom cycle. Higher levels of Phosphorus and Potassium during the late flower phase encourage plants to reach final maturation and maximize essential oil production.

Derived from: Potassium Sulfate, Potassium Phosphate, Magnesium Sulfate, Ammonium
Phosphate

**NPK: 1-40-22**

Applied during final ripening.

**Benefits:**
- For final ripening of plants
- PH Stable
- Highly concentrated
- Aids significantly in flower and resin production in late stages

**Section 19 – Processing and Extraction**

Please describe the technologies, methods, and types of equipment you will employ to extract the critical compounds from medical marijuana plants to produce the medical marijuana and medical marijuana products, and the types of medical marijuana products that will be produced:

The Grower/Processor Applicant will implement Standard Operating Procedures (SOPs) adopted from current Best Management Practices (BMPs), established in states with more developed medical marijuana programs. Director of Operations will develop and oversee implementation of rigorous cleaning protocols, which will be to the standard required by the Center for Disease Control (CDC) guidelines for Spaulding’s Classification of Critical. In line with the goals established by the Pennsylvania Department of Agriculture and the marijuana-specific ordinances promulgated in §§ 1151.27 – 1151.29, these SOPs will ensure only food-grade equipment is used; and all equipment used for the processing of marijuana plants and products have been properly sanitized and maintained in accordance with the appropriate state and federal standards. The Applicant will adopt and implement standards for processing marijuana plant products that adhere to the guidelines outlined by the American Herbal Pharmacopeia and the American Herbal Products Association.

The Applicant’s SOPs have been designed to:

- Regulate the usage of pesticides, fungicides and herbicides such that only state-approved products are administered to marijuana crops to be used in the production of marijuana products: § 1151.27 (a), (b)
- Maintain an accurate log of all actions taken to detect pests or pathogens, and all measures taken while cultivating marijuana plants to be used in the production of marijuana products: § 1151.27 (c)
- Ensure appropriate nutrient practices including utilizing appropriate fertilizer or hydroponic solution types; utilizing appropriate rates of application; treatment and recycling of wastewater; and maintaining an accurate log of all nutrients used during
cultivation and production of marijuana products: § 1151.27 (d)

- Require the visual inspection of all marijuana for the presence of mold, mildew, pests, rot, or grey or black plant material that is greater than an acceptable level as determined by the Department for all marijuana plants to be used in the production of marijuana products: § 1151.27 (e)

- Prevent any operator employed by the Company from adding any additional active ingredients or materials that alters its color, appearance, smell, taste, effect, or weight of medical marijuana to for all marijuana plants to be used in the production of marijuana products: § 1151.27 (f)

- Ensure the marijuana plants and products that have been designated for disposal will be kept in a separate, secure area that is away from viable plants and products: § 1151.27 (g)

- Ensure only parts of the medical marijuana plant that have been defined as appropriate in § 1151.27 (h) are used in the production of marijuana products

- Ensure all medical marijuana plants are processed in a safe and sanitary manner as defined in § 1151.27 (i)

For a more detailed description of all operational practices, control systems, and methodologies used by the Applicant for the cultivation of marijuana plants, please refer to the required response for Section 17: Requirements for Growing Medical Marijuana. This information includes:

- A description of all pesticides, fungicides, and herbicides used during cultivation
- A description of all nutrients and additives used during cultivation
- A description of the [BLANK] and medium used
- Information pertaining to HVAC controls
- Information pertaining to testing practices mobilized by the Applicant
- Proper storage of marijuana plant and product
- Proper storage of marijuana plant and product that has been designated for disposal
- Sanitation and manufacturing standards for cultivation
- [BLANK]
- Information pertaining to proper monitoring and recordkeeping practices

**Processing Employee Roles**

- The Director of Operations will ensure all Employees involved are trained to properly clean assigned equipment and document the process
- The Director of Quality Assurance will have mandatory certification as ServSafe Food Protection Managers, and will direct and oversee all procedures to ensure continuous compliance
- The Director of Processing and Extraction will oversee processing operations and be responsible for strategy
- The Manager of Processing and Extraction will be responsible for operational oversight and being onsite during all hours of processing operations
• Processing Employees work in the cultivation space and report to the Manager of Processing and Extraction

**Maintaining Safe and Sanitary Operational Conditions**

**Equipment Standards**

In accordance with 1151.27 (i), the Applicant will implement SOPs to ensure all medical marijuana plants, raw material and other ingredients used during the processing of medical marijuana products is handled in accordance with the appropriate state and federal regulations pertaining to food safety and sanitation. (For a more detailed description of safety and sanitation practices, please refer to Section 20: Sanitation and Safety.) These SOPs will include protocol to:

• Ensure all marijuana plants and products are handled on food-grade stainless steel benches or tables at all times
  - The Applicant will adhere to all “food-contact surface” regulations as promulgated in U.S. Public Health Service – Food Code, published by the FDA, as well as regulations promulgated by the CDC guidelines for Spaulding’s Classification of Critical, because medical marijuana can come into contact with mucous membranes.
  - These surfaces will be “smooth” and “easily cleanable” and will be free from pits
  - Cleanability will be equal to or exceeding that of (100 grit) number 3 stainless steel

• Define responsibility and frequency for cleaning and disinfecting each location or item used to process or store medical marijuana

• Monitor and maintain compliance standards

• Train Employees to ensure they are able at all times to answer the question, “How do you know that this item has been cleaned and/or disinfected?”

• Ensure cleaned/disinfected items shall be labeled (date/time)

• Ensure acceptable sanitation standards are maintained in all areas where marijuana plants or products are handled or processed
  - These standards will adhere to the “Food Equipment” sanitation classification and standards as established by the American National Standards Institute (ANSI)

• Ensure a rodent, bird, and pest free environment by taking the proper exclusionary practices
  - SOPs implemented by the Applicant will conform to standards promulgated in Chapter 6-501.111 of the U.S. Public Health Service – Food Code

All equipment, including stainless steel countertops and packaging utensils will be sprayed down and/or soaked in an appropriate chemical sanitizing solution to prevent contamination. Scales, balances, and any other equipment used in the rework process shall be routinely cleaned and calibrated by a laboratory actively accredited by the International Organization for Standardization (ISO). The laboratory chosen by the Applicant to perform calibration and
maintenance operations will conform to standards required by ISO/IEC 17025.

**Standards for Personal Hygiene, Sanitization, & Cleanliness**

- All staff will be required to maintain a neat and clean professional physical appearance (Chapter 323 of the U.S. Public Health Service – Food Code).
- All persons coming into direct contact with unpackaged and packaged consumer products must follow rigorous hygiene procedures as defined by Pennsylvania Department of Health Regulations pertaining to safe and sanitary handling of pharmaceutical-grade products (Chapter 323 of the U.S. Public Health Service – Food Code). These procedures are described in detail in the employee training manual, and include the following:
  - Provide sanitization and cleanroom preparation training to all processing employees. Standard operating procedures will be made available in digital and print forms, included in the Applicant’s employee handbook/training manual.
  - Set employee expectations for bathing or showering (see Restrictions on Medical Marijuana Product Handlers)
  - Set employee expectations for reporting any health issues, particularly those including excessive bodily fluids that may cause contamination, and allow sick leave as required
  - Require fingernails to be kept short
  - Require employees to wear gloves
  - Ensure work clothes are clean
  - Follow proper handwashing procedures (See Handwashing Procedures)
  - Prohibit any smoking or eating in areas where medical marijuana or medical marijuana products are handled
  - Ensure facility employees have reasonable opportunities to use toilet and handwashing facilities, and ensure these facilities are properly stocked and functioning
- The Applicant’s standard operating procedures will also incorporate suggestions for sanitization of all medical marijuana product manufacturing areas provided by the American Herbal Products Association (AHPA).

**Monitoring and Recording Atmospheric Conditions During Production**

**Atmospheric Controller**

The Applicant has chosen the iPonic Commercial Environmental Grow Room Controller to regulate temperature, humidity, and ventilation for all rooms in the facility where production or processing of marijuana plants is designated to occur. This system will ensure optimal atmospheric conditions are maintained in all processing areas, at all times; and help mitigate threats posed by mold, mildew, and an array of other harmful bacterial particulates.

Absolutely no marijuana plants or crops will be processed outside of climate controlled processing areas maintained by the Applicant.

The iPonic Commercial Environmental Grow Room Controller is UL and CUL listed, and NEMA certified for use in food and medical production-grade environments. The system
features digital connectivity, allowing status reports to be attained by a Registered Grower Employee from off-site, 24-hours a day, seven-days a week. Adjustments to atmospheric conditions can also be made off-site. For maximum quality control, the iPonic system is also capable of sending text and email alerts to Registered Grower Employees in the event optimal conditions are not maintained and actions need to be taken.

In full compliance with § 1151.27 (j), the Applicant will implement Standard Operating Procedures (SOPs) to:

- Ensure the iPonic Grow Room Controller is accurately monitoring and recording data and information pertaining to the regulation of temperature, humidity, ventilation, and water supplies used for the cultivation of marijuana plants
- Ensure a Registered Grower Employee compiles this information on a weekly basis, creating an electronic manifest to be stored in company records
- Ensure these records are stored for no less than 4 years

The Applicant will train all Registered Grower Employees on SOPs, requiring an incident report to be drafted each time additional actions are taken to restore optimal atmospheric conditions. This report will be filed and maintained for a period of no less than 4 years. This report will include the following:

- Information pertaining to atmospheric conditions recorded at the time of the incident
- A note indicating the condition that went beyond acceptable tolerances (heat, humidity, root zone temp, etc.)
- A detailed description of the cause of the incident, if known
- A detailed description of action(s) taken to restore optimal atmospheric conditions
- The specific time and date of the incident
- The name of the Registered Grower Employee responsible for the report
- Response time (time between first email or text notification, and first operator action taken)

### HVAC System

Trane Catalytic Air Cleaners will monitor, record, and regulate temperature, relative humidity, and airflow within all growing rooms in the Grower/Processor facility. The system will maintain ideal temperatures for processing medical marijuana between 72-75 degrees Fahrenheit. Humidity will be maintained 50-percent or below to prohibit any mold, mildew, or bacterial growth. The system will maintain appropriate air circulation within the facility. All rooms will be equipped with HEPA filtration to reduce contaminants and carbon filtration for odor control, which is vital to the safety, health, and well-being of all Registered Grower Employees.

In full compliance with § 1151.27 (j), the Applicant will implement Standard Operating Procedures (SOPs) to:

- Ensure the Trane System is accurately monitoring and recording data and information pertaining to the regulation of temperature, humidity, ventilation, and water supplies used for the cultivation of marijuana plants
- Ensure a Registered Grower Employee compiles this information on a weekly basis,
creating an electronic manifest to be stored in company records

- Ensure these records are maintained by the Applicant for a period of a minimum 4 years.

**Processing Medical Marijuana Plant**

The Applicant will utilize a molecular distillation extraction process for marijuana plants utilizing ethanol (grain alcohol) and short path distillation wiped film evaporation techniques. This will create the highest quality medical marijuana products possible.

The Applicant has adopted SOPs for the safe use and handling of hazardous chemicals, including the amount and concentration used, special handling procedures, engineering controls, and personal protective equipment. This room will be maintained under positive pressure with respect to the adjacent Ante Room, and supplied with HEPA filtered air to meet the ISO Class 7 standard for flow and particle count under static conditions.

The use of particle shedding materials (i.e., paper, cardboard or non-linen rags) will be prohibited in this area. Designated sections of the room will serve as areas to house equipment or perform procedures for the following various purposes:

**Marijuana Products**

The Applicant has developed written SOPs, formulations, and professional technical trainings to produce the following medical marijuana products:

- Bulk oil: The Applicant will produce bulk marijuana concentrate oil from marijuana plants
- Prefilled vaporizer cartridges: The Applicant will produce vaporizer cartridges that have been prefilled with marijuana concentrate oil produced by the Applicant

**Operational Flow**

The following is an operational flow demonstrating Applicant Employee check-in procedures:

- Before entering the facility, all Applicant Employees will check-in at the Security Room
● All Applicant Employees will then enter the Clean Room where they will sanitize self and change into proper attire
● All Cultivation Technicians will report to their required work stations inside the Vegetative/Flower Room, Mother Room, Trim Room, Dry Room, or Packaging Room
● All Processing Technicians will continue to the Extraction Wing of the facility before entering either the Clean Room for the Topical Solutions Laboratory or the Clean Room for the Extraction Room
● Once sanitized and properly gowned, all Processing Technicians will report to their required work station inside the Extraction Room or the Topical Solutions Laboratory

The following is an operational flow demonstrating how marijuana plant and ingredients will be handled in transit between the Dry Room to Trim Storage, then to the Extraction Room:

● Marijuana plants and ingredients will be packaged in airtight containers before being moved from the Dry Room to Trim Storage to prevent contamination from occurring while in transit to other areas of the facility
● After being properly packaged in airtight containers according to the Applicant’s standard operating procedures, all marijuana plants and ingredients will be transferred to Trim Storage. As per standard operating procedure, all containers are to remain shut during transit
● All containers will be stored inside the Trim Storage using the auxiliary entrance from the axis hallway, and will be sanitized according to the Applicant’s SOPs
● The applicant will maintain appropriate sanitation supplies to properly clean all marijuana plant containers upon being introduced into the room
● All marijuana plants and ingredients in the Trim Room will remain in containers until scheduled to be processed
● All containers of marijuana plants and ingredients in the Trim Room designated for processing will be sanitized before removal
● After being sanitized, all containers will be relocated to the Extraction Room using the main point of ingress/egress (which directly connects the Trim Storage Room to the Extraction Room)
● Once inside the Extraction Room, containers will be opened and all marijuana plants and ingredients will be removed and processed

Calibration of Machines and Equipment
All equipment, including stainless steel countertops and packaging utensils, will be sprayed down and/or soaked in an appropriate chemical sanitizing solution to prevent contamination. Scales, balances, and any other equipment used in the rework process shall be routinely cleaned and calibrated by a laboratory actively accredited by the International Organization for Standardization (ISO). The laboratory chosen by the Applicant to perform calibration and maintenance operations will conform to standards required by ISO/IEC 17025.

The Applicant will ensure Registered Grower Operators and Employees maintain records for all calibration and maintenance operations performed, according to best practices and
guidelines (§ 1151.27(d)) to ensure the following:

- Only approved, third-party laboratories are used to calibrate and maintain equipment used during the processing of medical marijuana
- Records are provided by all laboratories used by the Applicant
- These records are maintained by the Applicant for a period of no less than 4 years

Maintaining Power
As noted on the site plan included in Attachment D, and in accordance with § 1151.26 (a) (1) (viii), the Applicant will have a backup generator onsite for maintaining operation for a minimum of 48 hours following a power outage. The specifications for this generator will be determined during site build-out to ensure sufficient capacity. At minimum, this generator will be able to power all security and surveillance equipment, as well as the following specific rooms: mother room, veg/flower room, dry room, and extraction room. Typically no new extraction runs will be started during a power outage. The Applicant will also install an Uninterruptible Power Supply (UPS) for covering transition to the generator, and will have sufficient power to cover a minimum of 30 minutes. The average transition takes fewer than 10 minutes. Any modifications to equipment will lead the Director of Operations to reevaluate the required capacity of the generator and UPS.

Marijuana Plant Processing Equipment
The Applicant has developed SOPs for the professional operation of the following production apparatus:
Supplies

- Ethanol: Ethanol will be stored away from incompatible chemicals and away from any heat source or source of ignition. No more than 100 liters of ethanol will be stored onsite at any moment. Ethanol will be used during the winterization process, and will only be handled, aside from transfer out of volatile storage, in the winterization room of the facility.

- Isopropyl Alcohol: Alcohol will be stored away from incompatible chemicals and away from any heat source or source of ignition. No more than 100 liters of isopropyl alcohol will be stored onsite at any moment. Isopropyl alcohol will be used during the winterization process, and will only be handled, aside from transfer out of volatile storage, in the winterization room of the facility.

- All volatile solvents used during the manufacturing process will be stored in a separate storage room that has been designated for volatile chemicals and hazardous materials. The volatile storage room will be constructed from fire and blast proof walls that have been rated for at least two-hours. Additionally, the door will also be constructed of materials fire rated for at least two-hours, and will be blast proof to ensure safety of all Company personnel.

- The manufacturing of marijuana oil concentrates requires the usage of a high-volume air-compressor unit. For the safety and security of Company personnel, this compressor unit will be housed in a separate storage room featuring its own dedicated HVAC control.

Storage

Ingredients and Plant Materials
Ethanol. Both OSHA and the National Fire Protection Association (NFPA) have classified ethanol as a flammable liquid (29 CFR 1910.106; NFPA 30). Ethanol meets the criteria for a Category 2 Flammable Liquid, according to OSHA's Flammable Liquids standard and the HCS (29 CFR 1910.106; 29 CFR 1910.1200 Appendix B), because ethanol ignites at normal room temperatures, has a flash point of 55°F, and has a boiling point of 173°F. This area will have a NFPA rated flammable storage cabinet for holding ethanol that has been accepted into the manufacturing process. Cleaning products that may be flammable will also be stored in the flammable storage facility. No corrosive products or oxidizers will be used or stored in this room.

**Finished Product**

- The Company projects the facility will be able to produce approximately 200,000-300,000 grams of concentrated marijuana oil, annually.
- The Company will work specifically with local distributors to minimize amount of product and inventory maintained onsite.
- All marijuana—products, plant matter, ingredients, oils—will be stored in a secure room designated as limited-access; is constructed from concrete-reinforced walls, foundation, and ceiling; and, is regulated by a biometric vault door which requires a unique thumbprint and access code from each qualified Company employee.
- The Company will maintain three separate, secure rooms, each one maintaining the aforementioned security standards: Final Product Storage, In-Process Storage, and Raw Plant Storage.
- All secure storage rooms will be under strict surveillance at all times.

**Handling Non-Conforming Material**

Non-conforming material is a potential hazard to safety -- it can be easily and inadvertently assembled into end products. Therefore, the Applicant will require all non-conforming material be clearly labeled and segregated.

The Applicant will establish company-wide policies to ensure the products produced meet the following standards:

1. Standard operating procedures and policies
2. Standards and expectations for a continuous improvement program.
3. Personal hygiene, cleanliness, and sanitization standards as determined by the Pennsylvania Department of Health
4. Standards for cleanliness as determined by the Center for Disease Control and Prevention
5. Operating procedures for sanitization provided by the American Herbal Products Association
6. General and specific production and manufacturing safety training for all employees based on their function and location within the facility as well as their likelihood of
exposure to risk
7. Standard operating procedures for maintaining quality control standards throughout the production of consumer products in the facility, including independent laboratory testing
8. Standard operating procedures for the testing of consumer products
9. Standard operating procedures for handling and storage of consumer products
10. Standard operating procedures for packaging and continuous tracking via digital inventory system of consumer products
11. Standard operating procedures for the proper and informative labeling of consumer products
12. Standard operating procedures for the recall of consumer products
13. Standard operating procedures for receiving, handling, and responding to customer service inquiries related to consumer products
14. Standard operating procedures for integrating customer feedback and focus group data into a robust continuous research and development process

Waste Management
No chemical waste or other waste will be discharged via air or water release by the simple nature of the processes. Post-extraction waste plant materials will be disposed of as required by the Department.

The Grower/Processor Applicant shall select experienced and qualified Consumer Products Manufacturers, committed to the highest level of customer satisfaction and consumer product safety and will implement these policies into its manufacturing operations:

- **A Quality Management System** with robust and tightly controlled procedures in place to ensure the products that are being manufactured and delivered are at the highest quality and purity for safe human consumption. The Applicant will create and develop a quality system concerned with the organizational process and the conditions under which non-clinical health, scientific, and environmental safety studies are planned, performed, monitored, recorded, archived, and reported.

- **A Consumer Product Education Program** to ensure the products produced meet the quality and each customer has the tools and resources to use the product effectively and safely as intended by their prescribing physician. The Applicant will adopt the standards of the American Herbal Pharmacopeia and the Purity standard of the US pharmacopeia in its operations and philosophy to ensure medical marijuana finished products are created responsibly and with integrity.

Consumer Education
It is imperative that medical marijuana patients in Pennsylvania have full instructions on the use of products the Grower/processor Applicant may manufacture. Consumer education will be a cornerstone to ensure that medical marijuana patients do not accidentally overdose or use the wrong amount of medical marijuana product that could be potentially harmful. The Applicant will create educational materials for every product, including:
The name, description, and ingredients within the product and other relative information

- The appropriate responsible dosage methods for each product
- Newly developed products that could be more effective for specific illnesses for qualified Pennsylvania medical marijuana patients
- Substance abuse prevention educational material to educate public on potential signs of drug abuse

**Quality Assurance and Control**

All finished and semi-finished materials entering the consumer products manufacturing area of the licensed processing facility will be tested for quality. Scientifically valid methods will be utilized to acquire accurate data on the levels of compounds present within the material including but not limited to THC, THCA, CBD, CBDA, CBDV, CBN, CBG, CBC, other cannabinoids, and a wide range of terpenes including those published by the American Herbal Pharmacopoeia (AHP) in their Marijuana Inflorescence monograph.

The Company will create standard operating procedure and policies to ensure all manufactured medical marijuana infused products pass quality control testing for consistency and dosage, and meet the appropriate standards of the Consumer Product Safety Division. These SOPs will comply with the standards outlined in Code of Federal Regulation 211-Good Manufacturing Practices (GMP). To ensure all concentrate products manufactured by the Company are of pharmaceutical grade quality, Quality Control Employees will—as promulgated by the Company’s Quality Control Plan—receive job-specific training, and will be required to adhere to standard operating procedures that are GMP compliant. According to the Company’s Quality Control Plan:

- Quality Control Employees will be trained by the Company as to the standards of acceptability for any raw plant matter, and finished or unfinished marijuana concentrate used or produced at the processing facility
- Quality Control Employees are responsible for approving or rejecting any raw plant matter received by the processing facility
- Quality Control Employees are responsible for approving or rejecting any finished or unfinished marijuana concentrate produced onsite at the processing facility
- Quality Control Employees are responsible for approving or rejecting all solvents used in the production of marijuana concentrate onsite at the processing facility
- Accurate logs of all materials and products—accepted or rejected—must be kept at all times by all Quality Control Employees

**Objectives for Quality Control**

- Determine if appropriate sources of product and quality problems have been identified
- Confirm that data from these sources are analyzed to identify existing product and/or quality-control problems that may require corrective action
- Determine if unfavorable trends have been identified
- Confirm any data and analyze to identify potential product and/or quality-control problems that may require preventive action
● Verify that the data received by the CAPA system are complete, accurate, and timely
● Verify that appropriate statistical methods are employed (where necessary) to detect recurring quality-control problems
● Determine if results of analyses are compared across different data sources to identify and develop the extent of product and quality-control problems
● Determine if failure investigation procedures are followed
● Determine the degree to which a quality-control problem or nonconforming product is investigated and whether this investigation is commensurate with the significance and risk of the nonconformity
● Determine if failure investigations are conducted to determine root cause
● Verify that there is control for preventing distribution of nonconforming product
● Determine if appropriate actions have been taken for significant product and quality-control problems identified from data sources
● Verify that CAPA system procedure(s) have been defined and documented

General and Specific Safety Training
The Applicant will provide employees with a safe workplace. All processing facilities and standard operating procedures have been designed to eliminate serious hazards, and to follow all relevant safety and health standards published by the Occupational Safety & Health Administration (OSHA) under the United States Department of Labor. The Applicant’s first priority when it comes to safety is the elimination or reduction of hazards; only as a secondary measure do we rely on personal protective equipment (PPE) such as masks, protective eyewear, and gloves.

The following OSHA standards have also been incorporated into the Applicant’s operating procedures:

● Informing employees about hazards through training, labels, alarms, color-coded systems, chemical information sheets, and other methods
● Keeping accurate records of work-related injuries and illnesses
● Performing tests in the workplace, such as air sampling required by some OSHA standards
● Providing hearing exams or other medical tests required by OSHA standards
● Posting OSHA citations, injury and illness data, and the OSHA poster in the workplace where workers will see them
● Notifying OSHA of all work-related fatalities within 8 hours, and all work-related inpatient hospitalizations, all amputations, and all losses of an eye within 24 hours.
● Preventing discrimination or retaliation against a worker for using their rights under the law.

Section 20 – Sanitation and Safety
Please provide a summary of the intended sanitation and safety measures to be implemented at your
PROPOSED FACILITY AND SITE. THESE MEASURES SHOULD COVER, BUT ARE NOT LIMITED TO, THE FOLLOWING: A WRITTEN PROCESS FOR CONTAMINATION PREVENTION, PEST PROTECTION PROCEDURES, MEDICAL MARIJUANA HANDLER RESTRICTIONS, HAND-WASHING FACILITIES, AND INSPECTION SCHEDULES TO ENSURE THE ACCURACY OF OPERATIONAL EQUIPMENT.

Sanitation and Safety

Please provide a summary of the intended sanitation and safety measures to be implemented at your proposed facility and site. These measures should cover, but are not limited to, the following: a written process for contamination prevention, pest protection procedures, medical marijuana handler restrictions, hand-washing facilities, and inspection schedules to ensure the accuracy of operational equipment.

The Applicant shall establish facilities that promote sanitation and safety. Prior to initial operation, and henceforth on a quarterly basis, the Director of Quality Assurance will review and complete the Checklist for Facility Standards to ensure that all facility facilities are compliant with the standards promulgated by §1151.33 of the Pennsylvania Code, as well as the FDA Model Food Code (see Checklist: Facility Standards). The Director of Quality Assurance is responsible for identifying any actionable changes, and for coordinating with the Director of Operations to ensure changes take place. All Checklists will be stored for at least 4 years, in accordance with the Recordkeeping Plan (Section 22).

Furthermore, training to SOPs, local, state, and federal safety and regulatory requirements will be conducted initially, annually thereafter and subject specific in-service refreshers post-incident. Training shall be conducted by an internal subject matter expert and/or a third-party outside vendor. Regulatory controls include, but are not limited to the application and maintaining in good standing the necessary licenses, permits and approvals from local, state, and federal authorities to build, construct and operate this Growing, Processing, Extractions, and Pharmaceutical laboratory consistently within the requirements of the regulations and recommendations of relevant oversight bodies, including the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA), the Occupational Safety and Health Administration (OSHA), the United States Pharmacopeial Convention (USP), and the National Fire Protection Agency (NFPA).

This Sanitation and Safety Plan provides detail regarding how the Applicant will implement and monitor sanitary maintenance, storage, and safety-related operating procedures. The Plan is arranged in the following sections:

- Contamination Prevention
- Pest Protection Procedures
- Medical Marijuana Product Handler Restrictions
- Handwashing Procedures
- Handwashing Facilities
- Physical Inspection Schedules
  - Calibration of Equipment
- Employee Safety
- Disposal of Medical Marijuana Plants and Products
- Floors, Walls, Ceilings and Surfaces
- Water Supply
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

• Updates to Ensure Continuous Compliance
• Checklists

Contamination Prevention
The Applicant will follow the guidelines of the Center for Disease Control, the FDA, and the National Restaurant Association to limit the potential for contamination or adulteration of the medical marijuana grown and processed in the facility.

In order to maintain the medical marijuana free of contamination, all employees will be required to comply with the Applicant’s standard operating procedures. Employees will be trained to ensure absolute sanitary conditions in areas that have been designated for the growing of medical marijuana, processing and extractions, packaging and handling, storing, and delivery of medical marijuana products including all equipment, utensils, and accessories used during the growing process. When procuring equipment, the Operators and Employees will verify that all equipment and utensils are designed such that they are capable of being adequately cleaned.

Storage of Toxic Compounds
The Applicant will ensure that all toxic cleaning compounds, sanitizing agents, solvents used in the growing and processing of medical marijuana, and pesticide chemicals will be properly labeled and stored in a manner that prevents contamination of seeds, immature medical marijuana plants, medical marijuana plants and medical marijuana, and complies with any other applicable laws and regulations. Storage of these compounds will be located in specific rooms of the Growing facility, and SOP’s will be developed to ensure that all Operators and Employees fully understand how to store toxic chemicals.

Preventing employee contamination upon entry
The Applicant’s facility has been designed with clean rooms integrated into path flows such that in order to enter the facility, employees must go through clean rooms. (There may be exit routes that do not go through the clean room, for improved safety and to meet local codes.)

In these clean rooms, employees will have designated lockers for storing personal materials. They will be expected to change out of outdoor shoes, to put on sanitation garb that may include coveralls, caps, and gloves, discard any gum or candy or other items in their mouths, clean and reposition their ID badge, and all other mandatory requirements to maintain the sanitation quality of the facility. Prior to and following arrival all employees are expected to meet personal hygiene standards, including regular showering and remaining scent-free. After garbing, employees will not touch anything in the clean room.

At any point, should it become necessary or as part of protocols, the employee shall replace any sanitation garb. When later leaving the facility, employees should follow the garbing steps in reverse.

Employee sanitation standards
The Applicant’s standard operating procedures have been designed to meet or exceed the high sanitary standards of the regulations pertaining to the handling of food-grade products:

• Wear and replace gloves will be replaced after each batch of medical cannabis has been package; or, when beginning to package a different variety or shipment of product (to prevent cross-contamination); and, as by required, every two-hours. (§1151.33 of the Pennsylvania Code)

• Maintain a sanitation log with records retained for five years

• Wearing outer garments suitable to the operation in a manner that protects against the contamination of medical cannabis products, contact surfaces, or packaging materials.

• Maintaining adequate personal cleanliness.

• Employees will have assigned to them sufficient number of uniforms; uniforms shall be required during any and all shifts by all Grower/Processor employees. Uniforms shall not leave the premises, and shall
be maintained by the Applicant.

- Washing hands thoroughly and sanitizing if necessary to protect against contamination with undesirable microorganisms in an adequate hand-washing facility before starting work, after each absence from the work station, and at any other time when the hands may have become soiled or contaminated.

- Removing all unsecured jewelry and other objects that might fall into the medical marijuana or medical marijuana plants, equipment, or containers, and removing hand jewelry that cannot be adequately sanitized during periods in which a medical cannabis plant or product is manipulated by hand. If such hand jewelry cannot be removed, it will be covered by material which can be maintained in an intact, clean, and sanitary condition and which effectively protects against the contamination by these objects of the medical marijuana products, contact surfaces, or packaging materials.

- Wearing, where appropriate and in an effective manner, hair nets, headbands, caps, beard covers, or other effective hair restraints.

- Storing clothing or other personal belongings in locker rooms or other than where medical cannabis products, contact surfaces, or packaging materials are exposed or where equipment or utensils are washed.

- Confining the following to areas other than where medical marijuana products, contact surfaces, or packaging materials may be exposed or where equipment or utensils are washed: eating food, chewing gum, drinking beverages, or using tobacco.

- Taking any other necessary precautions to protect against contamination of medical cannabis products, contact surfaces, or packaging materials with microorganisms or foreign substances including, but not limited to, perspiration, hair, cosmetics, tobacco, chemicals, and medicines applied to the skin.

- Education and training. Personnel responsible for identifying sanitation failures or medical cannabis product contamination will have a background of education or experience, or a combination thereof, to provide a level of competency necessary for production of clean and safe medical cannabis products, contact surfaces, or packaging materials. The Director of Operations and Employees will receive appropriate training in proper medical cannabis product handling techniques and protection principles and shall be informed of the danger of poor personal hygiene and insanitary practices.

The employee handbook will include a stipulation for Operators and Employees that will allow them to call-in sick without penalty on an unlimited basis. This will prevent any contamination from reaching any medical marijuana plants or products. Directors of Quality Assurance, who will have mandatory certification as ServSafe Food Protection Managers, will oversee all procedures to ensure continuous compliance. These procedures include:

- ServSafe sanitary receiving guidelines (see also Section 11 Transportation Plan)

- Proper personal and surface hygiene
  - Provide sanitization and cleanroom preparation training to all processing agents. Standard operating procedures will be made available in digital and print forms, and will be included in the Applicant’s employee handbook/training manual.
  - Set employee expectations for bathing or showering (see Restrictions on Medical Marijuana Product Handlers)
  - Set employee expectations for reporting any health issues, particularly those including excessive bodily fluids that may cause contamination, and allow sick leave as required
  - Require fingernails to be kept short
  - Require employees to wear gloves
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

- Ensure work clothes are clean
- Follow proper handwashing procedures (See Handwashing Procedures)
- Prohibit any smoking or eating in areas where medical marijuana or medical marijuana products would be handled
- Ensure Grower/Processor Employees have reasonable opportunities to use toilet and handwashing facilities, and ensure these facilities are properly stocked and functioning
- Establish standard cleaning solution preparation and storage
- Follow the Checklist for Daily Sanitation
- Follow standard cleaning protocols in the event of any ad hoc cleaning requirements (see Floors, Walls, Ceilings and Surfaces)
  - Proper storage, such that contaminants are kept separate from saleable products (see Section 12: Storage)
  - Limiting handling, cleaning, and storing products to areas separate from contaminants
  - Washing and sanitizing all equipment

Sanitation and handling protocols
The Director of Quality Assurance will establish and oversee adherence to standard cleaning procedures for all buildings and equipment used to store medical marijuana. The Director of Quality Assurance will ensure all employees involved are trained to properly clean assigned equipment and document the process. In compliance with FDA requirements, one or more trained supervisors will be assigned to supervise overall sanitation. Each of these supervisors will be qualified by education, training, or experience to develop and supervise sanitation procedures.

The Director of Quality Assurance will assign specific personnel for the cleaning of all production equipment and oversee the proper performance of cleaning and sanitation standard operating procedures. To ensure sanitary production equipment, the Applicant will maintain standard operating procedures addressing written procedures to be implemented for the cleaning of equipment, including utensils, used in the manufacture, processing, packing or holding of all products. These written procedures, schedules, and logbooks will include:
  - Assignment of responsibility for cleaning equipment
  - Controlling airborne contamination
  - Using sanitary handling procedures
  - Using safe water in all operations
  - Performing chemical, microbiological, or other testing, as necessary to prevent the use of contaminated ingredients in growing and processing operations
  - Storing packaging materials, in-process medical cannabis raw material, and medical cannabis finished products appropriately to prevent contamination and adulteration
  - Preventing cross-contamination and mix-ups between contaminated or adulterated medical cannabis raw material or medical cannabis finished products and non-tainted medical cannabis
  - Washing or cleaning containers and packaging components that contain contaminants
  - Using effective measures to protect marijuana products against adulteration by other foreign materials when at risk due to processing equipment or instruments
  - A description in sufficient detail of the methods and materials used for cleaning and the methods of
disassembling and reassembling equipment to ensure proper cleaning

- Measures for the protection of clean equipment from contamination prior to use
- Required inspection of equipment for cleanliness immediately before use
- Based upon the individual equipment design, the following sequence of cleaning operations will be performed upon the completion of each batch of product:
  - If applicable, a reduced written disassemble and cleaning procedure may be utilized between sequential batches of the identical product brand, strength, and dosage form
  - Upon the completion of a manufacturing, or packaging operation, equipment will be disassembled and all moveable parts removed so that the equipment can be properly cleaned
  - All exterior surfaces will be sanitized and the interior cleaned with an approved detergent mixed with water and then rinsed thoroughly with tap water
  - Finally, all surfaces that come in contact with components will be sanitized with denatured alcohol and allowed to air dry
  - Upon completion, the employee will fill in the cleaning log and inform their immediate supervisor the equipment is ready for inspection

An audit or check will be performed on the equipment cleaning and its documentation on a random basis several times a week. These reviews will include an inspection of the actual equipment cleanliness and the accuracy of all cleaning documentation. All cleaning records required by this procedure will be retained for at least five (5) years after distribution of the last batch of product manufactured, processed or packaged utilizing that equipment.

When developing the above protocols, the Director of Operations will also incorporate the following elements:

- Defining responsibility and frequency for cleaning and disinfecting each piece of equipment or item that comes in contact with medical cannabis
- Monitoring compliance
- Training employees to ensure they are able at all times to answer the question “How do you know that this item has been cleaned and/or disinfected?”
- Cleaned/disinfected items should be labeled (date/time)

All areas will maintain a general cleanliness and go through routine maintenance. The facility will be of food production quality at all times, with frequent inspections and internal audits to ensure safety in production. Sanitation units or wash stations should be utilized throughout the facility where they are placed. Employees are encouraged to wash frequently and always between handling products. Restrooms and toilets will be located separately from all production and manufacturing areas. Restrooms will have a self-closing door and be completed enclosed with proper, individual ventilation unit. Wash hands signs will be placed above all sinks. Training on best practices will be given annually and documented. Restrooms will be cleaned daily and maintained in a clean manner.
Pest Protection Procedures
The Applicant will first seek to prevent pests from entering the facility. As described in Section 11, Transportation, the Applicant will inspect each incoming shipment and vehicle for pests; in the event pests are identified in the shipping and receiving area, or in quarantine, the Applicant will take immediate action. The Director for Quality Control will determine the specific actions taken, likely in consultation with an expert in integrated pest management.

The quarantine room will be tightly monitored for pests, and will only be accessed through the shipping and receiving area—not from the sanitary internal operational hallway—during such times as any quarantined items are unsealed. This room and contents will be sanitized in full on a monthly basis, at minimum, with shipments scheduled to allow for this time.

As described above, all employees will be required to enter the facility through a clean room and to maintain high standards of personal hygiene. These protocols are designed to prevent pests from entering with employees.

Within the facility, high standards for sanitation and cleanliness will be maintained, minimizing the likelihood for pests. This includes facility elements that are designed for easy sanitization, regular trash removal, strict limits on areas of the facility where food can be consumed, and more. In addition, all cultivation areas will follow the protocols described in Section 17, Pesticides.

The Director of Quality Assurance will also on a monthly basis, at minimum, review the entire facility for signs of pest infestation.

Medical Marijuana Product Handlers Restrictions
All registered Grower/Processor Employees will be explicitly trained to report to the Director of Quality Assurance, any personal health condition that might compromise the cleanliness or quality of the medical marijuana the Grower/Processor Employee might handle. The Director of Quality Assurance will emphasize this point as part of ensuring that Grower/Processor Employees share the vision of a facility that places safety first.

The Applicant will back this policy up by ensuring that all Grower/Processor Employees are able to call in sick without penalty on an unlimited basis. The Applicant will also establish generous paid sick leave.

The Applicant will include a Personal Health, Hygiene, and Cleanliness handout in the employee handbook that will describe all of the symptoms and health conditions that may compromise the cleanliness or quality of any medical marijuana handled by a Grower/Processor Employee. Before beginning employment, each Grower/Processor Employee will be asked to sign a document that acknowledges that the individual has read, and is aware of, the conditions described in the Personal Health, Hygiene, and Cleanliness handout. This document will be stored with the employee’s records for the duration of employment, plus 4 years.

During cold and flu season, or during periods when contagious sickness is frequent in the community, Director of Quality Assurances will be particularly diligent about meeting with and evaluating the health of each Grower/Processor Employee before he or she begins working directly with medical marijuana.

Grower/Processor Employees will also be trained to report any fellow employee that is demonstrating any of the symptoms or conditions identified in the Personal Health, Hygiene, and Cleanliness handout directly to the Director of Quality Assurance. A Grower/Processor Employee with any of the diseases or conditions listed in §27.153 may not be allowed to return to work, except as described in §27.153.

Hand Washing Procedures
Grower/Processor Employees will keep their hands and exposed portions of their arms clean. Grower/Processor Employees will clean their hands and exposed portions of their arms, including surrogate prosthetic devices for hands or arms, for at least 20 seconds, using a cleaning compound in a handwashing sink.

A sign detailing the step-by-step procedures will be posted conspicuously above every handwashing station.

Handwashing Facilities
The Applicant will provide its employees with adequate and convenient handwashing facilities furnished with running water at a temperature suitable for sanitizing hands, as well as disposable towels, a continuous towel system that supplies the user with a clean towel, or a heated-air hand drying device. A handwashing sink will be located in processing areas, and where good sanitary practices require employees to wash and sanitize their
hands. Handwashing facilities will also feature emergency eye washing stations. A handwashing sink will be equipped to provide water at a temperature of at least 38°C (100°F) through a mixing valve or combination faucet. A self-closing, slow-closing, or metering faucet will provide a flow of water for at least 15 seconds without the need to reactivate the faucet. Effective nontoxic sanitizing cleansers will always be present to aid in reducing microorganisms and particulate matter found on hands. A hand antiseptic shall be used as a topical application or hand dip, or a hand antiseptic soap, will also be provided.

Physical Inspection Schedules
The Directors of Cultivation and Processing will establish daily inspection schedules for each product in the medical marijuana growing or processing operations. Detailed visual inspections of each medical marijuana plant will be performed and documented weekly at a minimum to preserve the medical cannabis plants and resulting products. Employees performing physical inspections will look for and record findings for the area assigned. The following items will be included in the physical inspections:

• Signs of pest infestations
• Changes in biological colonies
• Mold and mildew
• Leaf and tip burn, discoloration, and spotting
• Changes in appearance of the media

The Applicant will perform regular in-house testing that will be scheduled by the Directors based on needs and recorded in the Inventory Control System (Section 14).
Tests that will be performed include:

• Soil pH
• Nutrient pH, Total Dissolved Solids (TDS), and Electro-Conductivity (EC)
• Soil EC/pH testing using a saturated media extraction (1 part soil to 2 parts water filtered) or the leachate pour-through method
• Water Oxidation Reduction Potential (ORP)

The Directors of Cultivation and Processing will ensure that all plants and medical cannabis products are evaluated during processing and tested in accordance with these procedures. Grower/Processor Employees working in growing or processing operations will be trained to identify signs of contamination and sub-standard product. The Director of Quality Control will approve the disposal of any medical marijuana plants. Two or more trained employees will perform a visual microscopic and naked eye inspection of each plant and/or medical cannabis product to determine:

• Physical inspection of characteristics such as color, texture and smell
• Presentation of the material (raw, cut, crushed, compressed)
• The presence of admixtures, foreign matter (sand, glass particles, dirt), mold, or decay
• The presence of any solvents or residue
• The presence of insects or other pests
• The presence of foreign material originating from poor or degraded containers

All cannabis plants and/or medical cannabis products are to be inspected by two or more trained employees for all visible foreign matter and sub-standard material to be removed. Foreign matter includes:

• Plant material from other strains/species or from other parts of the harvested strains/species
• Soil and rocks
• Insects and other pests
• Any man-made objects

Sub-standard material includes:
• Evidence of mold or fungi
• Any other material that would be deemed harmful or foreign

**Calibration of Equipment**
All scales/balances/other measurement devices will be registered with, and calibration techniques shall conform to, the standards developed by the Pennsylvania Department of Agriculture. The Director of Quality Assurance will maintain a log of maintenance and calibration procedures performed for the previous five years for all scales/balances/other measurement devices.

In addition to the above, in order to ensure consistent and reliable high standards and patient safety, the Director of Quality Assurance will verify the accuracy and cleanliness of operational equipment prior to the equipment being used on a new batch or product type. This verification process will include performing a validation test on a known substance, with the results recorded in the maintenance log. In the event that the test does not produce the expected results, the Director of Quality Assurance will oversee the complete calibration procedure prior to continued operation, and the results from the previous product run will be re-verified.

**Employee safety**

**Personal Protective Equipment**
Prior to operation, the Director of Quality Assurance will determine if hazards are present that necessitate the use of personal protective equipment (PPE). When this assessment is complete, the Director of Quality Assurance will produce a written document that certifies that the workplace has been evaluated and the date of the evaluation. The Director of Quality Assurance will then create and implement any work practices necessary to prevent employee exposure to hazard. After mitigating this risk, the Director of Quality Assurance will make a final determination as to whether or not PPE may reduce or eliminate the potential for injury or illness. If deemed necessary, the Director of Quality Assurance will select the appropriate PPE and train employees in the following information:

• What PPE is required
• When to use PPE
• When to properly use the assigned PPE, including how to put on, take off, and adjust it
• The PPE’s limitations
• How to properly care for, maintain, clean and dispose of the PPE

The Applicant will implement facility operations safety protocols and provide all Employees with adequate safety training relevant to their specific job functions, which shall include:

• Emergency action response planning as necessary
• Employee accident reporting and investigation policies
• Fire prevention
• Hazard communication policies, including maintenance of material safety data sheets (MSDS)
• Materials handling, chemical spill, and disposal policies
• Job hazard analyses
- Personal protective equipment policies, including respiratory protection
- Growing Facility operations will provide and maintain at least one emergency eye flushing station readily accessible to all employees and access to adequate eye flushing water for each employee working in field operations

The Growing Facility operations will visibly post and maintain an emergency contact list which includes at a minimum:

- Operation manager contacts
- Emergency responder contacts
- Poison control contacts

## Disposal of Medical Marijuana Plants and Products

In the event that the Applicant needs to dispose of seeds, medical marijuana or medical marijuana products, the Applicant will do so by following on-site disposal procedures, described in Section 15, Disposal. Reasons for disposal or return include (but are not limited to):

- Products that pass the expiration date
- Medical Marijuana plants or products that appear to have been contaminated or damaged or to have issues such as mold
- Returns associated with a product recall (covered in more detail in Section 14, Inventory Management and Recall)
- Returns from a Grower/Processor

## Floors, Walls, Ceilings and Surfaces

Pursuant to the requirements of the Pennsylvania Food Code, the Applicant will have floors, walls, and ceilings that are constructed of smooth, durable, and easily cleanable surface materials, especially in all areas where medical marijuana or medical marijuana products will be processed or stored. The Director of Operations will work with contractors during facility build-out to ensure appropriate materials are used.

## Updates to ensure continuous compliance

The Director of Operations designee will monitor regulatory updates from the Department of Health. In the event of amendments to relevant regulations, the Director of Operations will be notified, and all checklists and procedures will be updated to ensure continuous compliance. Updates to standard operating procedures or checklists will trigger a new version number assignment.

Management will undertake comprehensive review of the plans, procedures, and checklists on an annual basis, at minimum. This may include a legal or regulatory analysis review to ensure compliance, in the event of significant changes to the regulations or Department policies.

In the event of any updates to checklists and procedures, the Director of Operations will coordinate with the Director of Quality Assurance to ensure all Grower/Processor Employees will have access to updated materials, and will be trained accordingly.
Checklist: Facility Standards
To be completed by Director of Quality Assurance prior to opening for business, and at the start of each quarter thereafter.

Waste Removal
- All waste handling receptacles are durable, cleanable, insect- and rodent-resistant, leak-proof, and nonabsorbent.
- Receptacles and waste handling units for refuse that contain residue and are not in continuous are equipped with tight-fitting lids.
- Waste receptacles are located in their designated area of use:
  - Lavatories
  - Handwashing Sinks
  - [Director of Quality Assurance to update with additional locations as appropriate prior to using this checklist for the first time]

Cleaning and Disinfecting
- The Applicant has ordered and received, at minimum, a 4-month supply of approved cleaning and disinfectant products to be used on the premises
- Bulk cleaning and disinfecting employees are appropriately labeled
- Working containers for cleaning and disinfecting employees are appropriately labeled
- Working containers for cleaning and disinfecting employees include dilution instructions, as needed
- Working containers for cleaning and disinfecting employees in close proximity to areas where they will be frequently used, such that they are easily accessible
  - Facility Countertops
  - [Director of Quality Assurance to update with additional locations as appropriate prior to using this checklist for the first time]

The following signs have been posted in their appropriate locations:
- Sign: Employee Handwashing Procedure
  - Posted above all handwashing sinks
- Sign: When to Wash Your Hands
  - Posted above all handwashing sinks

Signatures
By signing below, the following employees certify that the checklist is true and correct.
Director of Quality Assurance
Checklist: Daily Sanitation
To be completed by [Grower/Processor Employee or janitorial service] when medical marijuana is protected in storage, after closing.

Name of Grower/Processor Employee
Date Completed
Time Completed

Waste Removal
- Waste receptacles have been emptied and cleaned
- Waste receptacles have been returned to their area of use

Cleaning and Disinfecting
- Surface areas where medical marijuana is dispensed have been cleaned, disinfected and dried
- Cleaning and disinfecting employees are appropriately labeled

Eye Washing Stations
- Eye washing fluid has been replenished, as needed

Lavatories
- Hand soap supply has been replenished
- Single use towel supply has been replenished
- Cleaning and disinfecting employees are appropriately labeled

The following lavatory areas have been cleaned:
- Floors & Floor Drains
- Sinks
- Soap Dispenser
- Faucets
- Mirrors
- Toilets
- Urinals
- Dryers
- Towel Dispenser
- Other

The following lavatory areas have been cleaned:
- Floors
- Sinks
- Mirrors
The following areas have been checked for pests. Indicate whether or not pests have been detected using Y/N

☐ Toilets
☐ Urinals
☐ Dryers
☐ Other

Signatures
By signing below, the following Grower/Processor Employees certify that the checklist is true and correct.
Director of Quality Assurance
Grower/Processor Employee

After completion of checklist
Copy this checklist and store a copy in accordance with the Recordkeeping Plan.
Send the original checklist to the Director of Operations.

Section 21 – Quality Control and Testing for Potential Contamination
By checking “Yes,” you affirm that quality control measures and testing efforts must be in place to track active ingredients (THC and CBD) and potential contamination of medical marijuana products.

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Section 22 – Recordkeeping

Please provide a summary of the recordkeeping plan that will be in place at your proposed facility and site. The plan should cover, but is not limited to, the following: a system for monitoring, recording, and regulating temperature, humidity, ventilation, water supply, and lighting that affects the growth of medical marijuana plants, an equipment maintenance log, and records of inventory and all transactions.
**Monitoring and Recording HVAC Status**

The Grower/Processor Applicant has chosen the iPonic Commercial Environmental Grow Room Controller to regulate the temperature, humidity, ventilation and water supply for all rooms in the facility where the cultivation of marijuana plants is designated to occur. This system will ensure that optimal atmospheric conditions are maintained in all cultivation rooms, at all times; and, will help mitigate the threat posed by mold, mildew, and an array of other harmful bacterial particulates. Absolutely no marijuana plants or crops will be cultivated outside of the climate controlled cultivation rooms maintained by the Applicant.

The iPonic Commercial Environmental Grow Room Controller is UL and CUL listed, and NEMA certified for use in food and medical production-grade environments. The system also features digital connectivity, allowing status reports to be attained by a Registered Grower Employee from off-site locations, 24-hours a day, seven-days a week. Adjustments to atmospheric conditions can also be made off-site. For maximum quality control over marijuana plant crops, the iPonic system is also capable of sending text and email alerts to Registered Grower Employees in the event that optimal conditions are not being maintained, and that additional actions will need to be taken.

In full compliance with Chapter 1151.27 (j) of the Pennsylvania Bulletin, the Applicant will implement Standard Operating Procedures (SOPs) to:

- Ensure that the iPonic Grow Room Controller is accurately monitoring and recording data and information pertaining to the regulation of temperature, humidity, ventilation and water supplies used for the cultivation of marijuana plants
- Ensure that a Registered Grower Employee compiles this information on a weekly basis, creating an electronic manifest to be stored in company records
- Ensure that these records are stored for no less than four (4) years

The Applicant will train all Registered Grower Employees on the SOPs requiring an incident report to be drafted each time additional actions are taken to restore optimal atmospheric conditions. This report will be filed with company records, and maintained for a period of no less than four (4) years. This report will include:

- Information pertaining to the atmospheric conditions recorded at the time of the incident
- A note indicating the condition that went beyond acceptable tolerances (heat, humidity, root zone temp, etc.,)
- A detailed description of the cause of the incident, if known
- A detailed description of the action(s) taken to restore optimal atmospheric conditions
- The specific time and date of the incident
- The name of the Registered Grower Employee responsible for the report
- Response time (time between first email or text notification, and first operator action taken)

**Quality Assurance and Raw Ingredients**

The Applicant will ensure Registered Grower Operators and Employees maintain records for all raw ingredients used during processing. Fresh and viable materials are essential for quality control purposes, and must be maintained in the proper conditions to prevent spoilage, waste or contamination. The Applicant will implement SOPs to ensure full compliance with Chapter 1151.27 (d) of the Pennsylvania Bulletin. In particular, these SOPs will indicate the following:

- Strains of marijuana plant used in the production of each product
- The potency and CBD and THC levels of all strains of cannabis used
Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

- Date of processing
- Date of harvesting
- Date of expiration
- The Registered Grower Agent will follow the manufacturer’s application, storage, and disposal recommendations for all fertilizer products
- All crop applications will follow established spraying and feeding protocols
- Records of the type and amount of fertilizer will be maintained and recorded into the Electronic Tracking System provided by the state for compliance, auditing, and referencing as a training document for all Registered Grower Operators and Employees

**Calibration and Maintenance of Equipment**

In full accordance with Chapter 1151.27 (i), the Applicant will implement SOPs to ensure that all medical marijuana plant, raw material and other ingredients used during the processing of medical marijuana products is handled in accordance with the appropriate state and federal regulations pertaining to food safety and sanitation. Specifically, these SOPs will include protocol to:

- Ensure that all marijuana plant and product are handled on food-grade stainless steel benches or tables at all times, no exceptions
  - The Applicant will adhere to all “food-contact surface” regulations as promulgated in U.S. Public Health Service – Food Code, published by the FDA
  - These surfaces will be “smooth” and “easily cleanable” and will be free from pits
  - Cleanability will be equal to or exceeding that of (100 grit) number 3 stainless steel

- Ensure that acceptable sanitation standards are maintained in all areas where marijuana plant or product is handled or processed
  - These standards will adhere to the “Food Equipment” sanitation classification and standards as established by the American National Standards Institute (ANSI)

- Ensure a rodent, bird and pest free environment by taking the proper exclusionary practices
  - SOPs implemented by the Applicant will conform to the standards promulgated in Chapter 6-501.111 of the U.S. Public Health Service – Food Code

All equipment, including stainless steel countertops and packaging utensils will be sprayed down and/or soaked in an appropriate chemical sanitizing solution to prevent contamination. Scales, balances and any other equipment used in the rework process shall be routinely cleaned and calibrated by a laboratory that is actively accredited by the International Organization for Standardization (ISO). The laboratory chosen by the Applicant to perform calibration and maintenance operations will conform to the standards required by ISO/IEC 17025. The Applicant will ensure Registered Grower Operators and Employees maintain records for all calibration and maintenance operations performed. At a minimum, the following set of best practices and guidelines (Chapter 1151.27(d) of the Pennsylvania Bulletin):

- Ensure that only approved of third-party laboratories are used to calibrate and maintain equipment used during the processing of medical marijuana
- Ensure that records provided by all laboratories used by the Applicant
- Ensure that all utensils are sterilized and cleaned according to Company SOPs and ISO standards
- Ensure that these records are maintained by the Applicant for a period of at least four (4) years
Monitoring and Recording: Potency of Nutrient Solutions

In a deep-water culture hydroponic system, the roots of the marijuana plant are suspended in a solution of water and liquid nutrients. Air is introduced via forced induction into each root pot, allowing the plant to both breathe and feed without the use of soil. The Applicant will maintain a strict nutrient recycling schedule:

- Each day, all nutrient baths being used in the cultivation of marijuana plants will be tested for pH-levels and nutrient potency
- Once a week, all nutrient baths being used in the cultivation of marijuana plants will be supplemented with additional liquid nutrients
- Every 14-days, all nutrient baths being used in the cultivation of marijuana plants will be drained and cleaned completely, allowing for the introduction of fresh nutrient solution
- During the final two weeks of growth, all nutrient baths being used in the cultivation of marijuana plants will be drained completely and replaced with water that has underwent reverse-osmosis treatment
- Once daily, during the vegetative phase of growth, the canopy of marijuana plants will be foliar fed using a nutrient solution that contains only Department approved additives

In order to comply with Chapter 1151.27 (d) of the Pennsylvania Bulletin, the Applicant will ensure that a Registered Grower Employee manually tests all nutrient solutions and nutrient baths used in the cultivation of medical marijuana. Potency, which will be measured in Parts Per Million (PPM), and PH-levels will be recorded on a daily basis and stored in a weekly log. The Applicant will maintain all records for a period of no less than four (4) years. Additionally:

- Any time a nutrient solution or nutrient bath is supplemented with fresh solution (but not entirely replaced), a Registered Grower Employee will record this information into a cultivation manifest, along with the time and date of execution
- Any time nutrient solutions or nutrient baths are replaced entirely, a Registered Grower Employee will record this information into a cultivation manifest, along with the time and date of execution
- Foliar feeding schedule
- The date the flushing cycle began

Monitoring and Recording: Lighting Schedules and Transition Time Tables

The I-ponic Environmental Control System will be used to monitor, record, and regulate lighting systems within all growing rooms in the Grower/Processor facility. The following lighting system has been selected based on superior performance:

- LED lighting systems:
  - PL Light 1000/600 HSE LP2 with Heliospectra tunable LED light
- Lighting: Breeding Plants will be placed under the latest LED lighting technology to reduce energy costs, vigorously increase growth, and create new starter plants. Lighting schedules will be determined by marijuana plants phase of development.
  - Lights will be left on for a period of 18-hours, and then off for a period of six-hours during the vegetative phase of growth.
  - Lights will be switched to a 12/12 schedule; 12-hours of light, 12-hours of dark to initiate the flowering phase of marijuana plant growth. Lights will remain on a 12/12 schedule for the remained of plant development (approximately 8-12 weeks).

The Applicant will ensure Registered Grower Operators and Employees maintain records for all lighting schedule
transitions, from 18/6 to 12/12. This reduction in available light triggers a photosynthetic reaction within marijuana plants causing them to begin to flower. The Applicant will implement SOPs to ensure full compliance with Chapter 1151.27 (d) of the Pennsylvania Bulletin. In particular, these SOPs will indicate the following:

- Date of lighting schedule transition
- Physical condition of lights
- Number of plants in the cultivation room
- Plant height at time of transition
- Name of Registered Grower Employee responsible for transition
- These records will be maintained by the Applicant for no less than four (4) years

Monitoring and Recording: Mold, Mildew and Adverse Plant Conditions

In accordance with § 1151.27, Registered Grower Employees will regularly inspect each plant for the presence or absence of pests and disease. The Grower/Processor Applicant will ensure that any Registered Grower Employees performing an application of potential pesticides will be a Pennsylvania state-certified pesticide applicator. Additionally, the Grower/Processor Applicant will only use products that are registered and approved by the state of Pennsylvania in accordance with Chapter 128 issued under the Pennsylvania Pesticide Control Act of 1973 (3 P. S. § § 111.21—111.61) and listed and published in the Pennsylvania Bulletin.

The Applicant will implement SOPs to ensure that each Registered Grower Employee responsible for cultivating or processing marijuana plants keeps an accurate log of all pesticides, fungicides and herbicides applied to any marijuana plant or crop at the facility. In compliance with Chapter 1151.27 (c):

- The Applicant will maintain a log of all actions taken to detect all pests or pathogens, and will also document the measures taken by the applicant for controlling and/or remedying any un-intended condition.
- The Applicant will maintain a log of all pesticides, herbicides and fungicides used during the cultivation of medical marijuana plants. These records will be maintained by the Applicant for no less than four (4) years.

Inventory

The Applicant will ensure Registered Grower Operators and Employees maintain weekly inventory. At a minimum, the following set of best practices and guidelines (Chapter 1151.27(d) of the Pennsylvania Bulletin):

Batch Testing

The Applicant will ensure Registered Grower Operators and Employees maintain records for all third-party laboratory testing performed. At a minimum, the following set of best practices and guidelines (Chapter 1151.27(d) of the Pennsylvania Bulletin):

Distribution

The Applicant will ensure Registered Grower Operators and Employees maintain records the amount of cannabis products distributed each month. At a minimum, the following set of best practices and guidelines (Chapter 1151.27(d) of the Pennsylvania Bulletin):

Monitoring Updates to the Pennsylvania Bulletin
The Operations Director or Grower/Processor designee will monitor the Pennsylvania Bulletin on its scheduled release dates for regulatory updates from the Department. In the event that any relevant regulations change, the Operations Director will be notified, and all checklists and procedures will be updated to ensure continuous compliance. Updates to standard operating procedures or checklists will trigger a new version number assignment.

Grower/Processor Supervisors are responsible for preparing summary reports on a quarterly basis, at minimum, reviewing the implementation of the plan, procedures and checklists, and ensuring these succeed in keeping the Applicant compliant with all laws and regulations. These reports will be submitted to the Operations Director, who will prepare semi-annual or annual reports for the Grower/Processor records and the Department of Health, if required.

Management will review the plans, procedures, and checklists on an annual basis, at minimum. This may include a legal or regulatory analysis review to ensure compliance, in the case of significant changes to the regulations or Department policies.

In the event of any updates to checklists and procedures, the Operations Director will coordinate with the Grower/Processor Supervisors to ensure all Grower/Processor agents will have access to updated materials, and will be trained accordingly.

Recordkeeping for Training
All Grower/Processor agents will undertake initial training prior to beginning work at the Grower/Processor. This training period will include the mandatory two-hour training developed by the Department of Health, as well as detailed Applicant-specific training on compliance, diversion prevention, applicable laws, policies and
procedures.

Grower/Processor agents will also have on-site access to a physical copy of the Applicant’s standard operating procedures. All Grower/Processor agents will receive annual refresher training courses, as well as ad hoc training when regulations, research, or procedures are updated or change. All Grower/Processor agents are expected to undertake ASA’s Patient-Focused Certification training within one calendar year of employment. All training will be documented in the Grower/Processor agent’s employee file, including the name of the trainer, and the date, duration and content of the training.

The Applicant will ensure Registered Grower Operators and Employees maintain records for all trainings and training events conducted by the Applicant. These records, in compliance with Chapter 1151.27(d) of the Pennsylvania Bulletin, SOPs will be implemented to:

- Require all training events being sponsored or conducted at the Applicant’s premises be recorded into a manifest for recordkeeping purposes
- Require that all instructors, trainers and teachers mobilized during all training events are certified in their areas of expertise; or, have demonstrated substantial industry experience
- Ensure that all instructors, trainers and teachers provide the proper credentials, and that these credentials are included in the Applicant’s manifest for recordkeeping purposes
- Require the Applicant to keep accurate information on the identities of all Registered Grower Employees that attend such training events
- Ensure that all records pertaining to training are maintained by the Applicant for a period of no less than four (4) years
Part E – Applicant Organization, Ownership, Capital and Tax Status
(Scoring Method: 150 Points)

SECTION 23 – ORGANIZATIONAL STRUCTURE

### Applicant’s Form of Organization

<table>
<thead>
<tr>
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<th>Limited Liability Company</th>
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<td>Partnership</td>
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### Applicant’s Organization Documents

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### Applicant’s Identification Numbers

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The applicant affirms that workers’ compensation insurance will be obtained by the time the Department determines you to be operational under the Act and regulations. ❌ Yes ❌ No

SECTION 24 – BUSINESS HISTORY AND CAPACITY TO OPERATE

**DESCRIBE YOUR BUSINESS HISTORY AND YOUR ABILITY AND PLAN TO MAINTAIN A SUCCESSFUL AND FINANCIALLY SUSTAINABLE OPERATION:**

165
Nutritional High (Pennsylvania) LLC ("NH(PA)") is a wholly owned subsidiary of Nutritional High International Inc. ("NHII"). The parent company is focused on developing, manufacturing, and distributing products and nationally recognized brands in the hemp and marijuana-infused products industries, including edibles and oil extracts for nutritional, medical, and adult recreational use. The Company works exclusively through licensed facilities in jurisdictions where such activity is permitted and regulated by state law.

The NH(PA) project is one of the NHII’s initiatives to expand the company and acquire licenses and operating businesses related to marijuana-infused products elsewhere in the United States. The NHII’s vision is to establish a leading foothold in several distinct parts of the value chain of the North American medical marijuana industry.

To achieve this, the Company is focused on developing, acquiring, and designing marijuana-infused products and marijuana concentrate products and brands for use by licensed operators entering into raw materials and packaging agreements with the Company in jurisdictions where permitted. The leadership of the NH(PA) project believe this expertise in medical marijuana processing and extraction that comes with the brand will be a benefit to Pennsylvania’s medical marijuana patients and facilitate the project’s success.

**Experienced Executive & Advisory Teams**

Funding for the NH(PA) project will come from NHII, a publicly-traded Canadian company subject to strict financial oversight, compliance, and regulation. The NHII management team has established systems of internal control over the financial reporting process, which are designed to provide reasonable assurance that relevant and reliable financial information is produced.

The leadership team for the NH(PA) project, described below, have been carefully selected by the NHII leadership to succeed in Pennsylvania.

**Vernon Jim Frazier, CEO,** has over 23 years of experience in the food industry and a proven track record of developing and implementing branded and private label programs while driving profits. He grew GKI Foods from a $9.0 million company to over $22 million in revenue, making it one of the largest private label chocolate manufacturers in the U.S. Currently, he owns and operates a successful Florida-based candy and chocolate business which has been a well-known manufacturer of confectioneries for over 40 years. He has managed the expansion of his plant facilities, significantly expanded sales, and developed new customer bases across all retail channels.

Currently, Mr. Frazier is on the Board of the Cocoa Beach Regional Chamber of Commerce, a Board member of the Junior Achievement of Brevard County, and the Founder of the Rockledge Business Alliance.
Billy Morrison, COO, a cultivation and extraction expert, founded Peloton Pharmaceuticals, where he designed, developed, and deployed a nearly autonomous grow system that mitigates labor and reduces cost. He brings many years of experience in operating marijuana companies, including founding The Union Collective, a successful California-based delivery dispensary, and Capstone Analytical, one of the first Bay Area thin layer chromatography testing facilities. At Temez Extracts, Mr. Morrison pioneered a patented water-conserving technology that eliminates water changeouts, and will lead NHII’s oil extraction efforts. He has 2 years of post-MBA management consulting and forensic accounting experience with the May corporation in Park Ridge, Illinois.

Lastly, Mr. Morrison is on the Board of Directors for Peak Health, which is a nonprofit cancer research center specializing in early detection funding and research in phyto-immune therapy.

Landon Long, Director of Processing and Extractions, founded “Infusion Factory”, one of the nation’s first marijuana-specific contract manufacturers and white label services provider focused on the formation, production, and commercialization of safe, consistent, dose accurate, and compliant medicinal marijuana products.

Mr. Long owns and operates a successful vapor hardware company that has been creating innovative vapor and ancillary medical marijuana consumer products since 2011. He joins the team with over 20 years of combined marketing, production, and marijuana-specific expertise.

Thomas Shannon, Director of Security, has managed a group of nine Regional Managers at Alert Center in Denver, Colorado. He started Peak Security, which specialized in the sales, service, installation, and monitoring of burglar, fire and camera systems. Since then, Mr. Shannon has been a consultant at United Systems for 5 years, where he sold and supervised the installation of burglar, fire and camera systems. In 2010, he started MAXX Security Inc., which Mr. Shannon is currently building through sales of burglar, fire and camera systems.

Nickolas J. Brait, Director of Transportation, has been active in the Colorado marijuana industry since 2013 as an attorney, consultant, and entrepreneur. In these positions, he has actively worked with dozens of marijuana businesses in a multitude of roles. Nick currently assists Colorado licensees with supply chain management and logistics as a Strategic Account Manager for COWA Science Corporation. As part of his duties, Nick is responsible for overseeing the daily purchasing and associated logistics for COWA’s largest customers, including some of the largest in the State of Colorado. This experience has given him a unique insight into the daily purchasing requirements of marijuana businesses, and the ability to manage the logistics required to operate a large marijuana production operation.

Michael W. Bain, Jr., CFO, has over 25 years of experience in public accounting, providing tax and accounting services to businesses and high net worth individuals. He is a partner and CPA in a certified public accounting firm, Mowry, Marty & Bain Consulting,
LLC, and registered investment advisory firm, MBIA Capital Advisors, both located in Cincinnati, Ohio. Michael has assisted NHII with various sources of financing needed for future expansion projects.

**Advisory Board**

As a project of the NHII, NH(PA) has access to the NHII leadership and network. As experts in the global medical marijuana industry, they will be available to provide input on best practices and new research developments from the NHII’s expanding range of product lines and companies.

As described below, the executive team of NHII and additional selected experts will form the NH(PA)’s Advisory Board to support the establishment of operations in Pennsylvania upon NH(PA) receiving requisite regulatory approvals. The Executive Team of NHII and the Advisory Board will be available to the NH(PA) on an as-needed basis.

Together, these experts have a history of success creating, designing, and executing comprehensive operations, marketing, business development, and sales programs and strategies. These skillsets will support the NH(PA) team in developing a successful grower/processor operation in Pennsylvania.

**Adam Szweras, Corporate Secretary and Director of NHII**

Mr. Szweras is a partner with the law firm Fogler, Rubinoff LLP, and co-founder of Foundation Markets Inc., a Toronto-based investment bank and Exempt Market Dealer. Mr. Szweras has expertise in recreational and medical marijuana laws in the USA and Canada, and provides assistance with NHII’s licensing efforts in various jurisdictions. Mr. Szweras has practiced securities law for over 18 years, focused on developing and growing companies.

**David Posner, President, CEO of NHII**

Mr. Posner brought “Hempen Gold”, the first hemp-infused beer, to Canada. He imported and created marketing and branding initiatives for various other alcoholic products in Canada. He was formerly an acquisitions manager for Stonegate Properties, Inc., where he managed real estate properties and brokered deals in Canada and Oklahoma. Mr. Posner is responsible for overall direction and strategy of the Company, and also leads the Company’s real estate acquisition process.

**Alex Storcheus**

Mr. Storcheus has been involved with NHII since its inception in 2014, and currently serves as SVP, Corporate Finance at Foundation Markets – a Toronto based merchant/investment bank. He assists NHII with expansion efforts in various jurisdictions and financial advisory projects. Previously, Mr. Storcheus worked at the Department of National Defense, holds a
BBA from the Schulich School of Business at York University, and is also a CFA Charterholder.

Hamish Sutherland
Mr. Sutherland values most a commitment to customer satisfaction, clear statement of value proposition and market focus. His business culture preference is for change-oriented operations reaching for a new plateau. He excels in high-growth, dynamic business operations in pharma, technology, solutions, manufacturing, and services. His specialties include startups, high-growth strategies, international market development, technology branding, and financial capital structuring for small, high-growth tech companies. He has positioned himself as a guide to entrepreneurs. Mr. Sutherland has experience building from the ground up or from a highly volatile base. A dedicated sales leader, Mr. Sutherland has built and led sales teams throughout North America, Australia, and the Asia Pacific.

Robert Schwartz
Mr. Schwartz has been a serial entrepreneur and leader in the import/export industry for over 15 years. His expertise lies in manufacturing, global distribution, and corporate restructuring. Mr. Schwartz has direct ties with aftermarket automotive manufacturers and SOEs in China, distributing quality product throughout Canada, United States, and Mexico. His background includes jobs at one of the top five banks in Canada, and also financing micro-cap companies in the venture capital space. Mr. Schwartz currently serves as a director at Aura Health Corp. He holds a Bachelor of Arts degree from York University in Economics, and serves as Director of Lakeside Minerals Inc. and Aura Health Corp.

Exceptional Concentrate Products & Bulk Liquid Concentrate
A major benefit of the NH(PA)’s affiliation with the NHII is access to the international group’s expertise and research. The primary product lines for NHII are described below, and will be adapted by the NH(PA) team and Advisors to suit the medical marijuana patients in Pennsylvania.

In December 2016, NHII completed development of and launched its flagship line of products under the brand name "FLI". NHII is finalizing the formulations for each of the products, which will then be manufactured by Palo Verde at the Company’s Pueblo, Colorado, facility. Below is the staged roll-out of different product lines that the Company expects to introduce:

Liquid Concentrate for Bulk Sales
Initially the FLI line of products will feature the liquid concentrate product, which will be manufactured using NHII’s process that employs a mix of mechanical separation, cold ethanol extraction, and short path distillation. The bulk oil products will only be made available for sale to other growers and processors in the state. The versatility of the
process allows the manufacturer or to control final product characteristics to fit the requirements of the manufacturer in terms of terpene and cannabinoid profiles. The liquid concentrate will initially be sold in bulk quantities by Palo Verde to other infused product manufacturers.

Consumer-focused Concentrate Products (Attachments 24A & 24B)
The product launch featured concentrate products that will be sold to licensed retail dispensaries in Colorado. The current infrastructure permits for the manufacture of extracts to be consumed through vaporizing or "dabbing" such as shatter, gelatin capsules, and vape pen cartridges. The NHII management has reviewed many options for the cartridge design to incorporate the consumer feedback and ensure that the product quality is top notch - in line with the quality of oil extract. Consumer-focused concentrate products are being introduced subsequent to liquid concentrates in order to ensure that the equipment is properly calibrated for a successful product launch.
Acquisition of Profitable IP and Licensing Agreements
NHII believes branding will be important and is focusing on developing specific brands that it believes will resonate with consumers.

Purple Haze Properties
On June 5, 2015, NHII entered into a license agreement with PHP, granting the Company exclusive rights to manufacture and distribute marijuana and hemp oil-infused products under the "Jimi Hendrix" brand including gummy bears, hard candies, and health and energy beverages, and granting non-exclusive rights to manufacture and distribute certain apparel and accessories under the “Jimi Hendrix” brand in the United States and Canada.

The term of the license agreement is for five years, commencing October 1, 2015, with a renewal option for an additional five years.
Strategic Vision: A Focus on Research, High-Quality Oil, and Patient Access

In addition to the product lines described above, the NHII has a strong vision that includes the development and acquisition of marijuana health clinics in the United States. The NHII is developing a breadth of expertise in service provision to medical marijuana patients and cultivation experience with a variety of modalities, and will use this expertise to support the NH(PA) project.

Acquisition of Aura Health Clinic in Arizona

In December 2016, the NHII made a 50% deposit to acquire a 30% investment interest in its second clinic, to be opened in a busy retail district in Mesa, Arizona.

In November 2010, voters passed the Arizona Medical Marijuana Act, designating Arizona Department of Health Services ("ADHS") to administer the medical marijuana program in the State. According to ADHS annual report, in 2015 there were a total of 77,639 Qualifying Patients in the state, which is approximately 1.2% of the total state population. There are a total of 14 qualifying conditions, which includes: cancer, Hepatitis C, cachexia, seizures, glaucoma, sclerosis, Alzheimer’s, severe and chronic pain, muscle spasms, HIV, AIDS, Crohn’s disease, nausea, and post-traumatic stress disorder. The medical health clinics test prospective patients, and where such patients are found to have one of the qualifying medical conditions, the clinics issue medical-use certificates.
**Cultivation Facility: The Lakeside Project**

Starting with Nevada and Colorado, NHII has also begun to build medical and adult-use marijuana cultivation facilities, partnering with Lakeside Minerals. Lakeside’s cultivation facilities will be designed to utilize automation technology, and data collection and analysis to produce high-quality marijuana in an efficient, safe, and low cost manner. Building on the collective experience of Lakeside’s board and executive team, Lakeside is expected to build or acquire, own, and operate highly effective, low cost cultivation facilities. Lakeside is currently engaging in discussions with various technology providers and developers to acquire, integrate, and utilize best of breed automation systems and technology for these purposes.

The leading cultivators in Canada, Holland, Israel, and the United States have demonstrated that analytics play a critical role in marijuana production. The collection and analysis of data will allow Lakeside to perfect growing processes, maintain high compliance standards, and develop superior logistics channels for the express purpose of building patient and customer trust in the Lakeside brands.

Lakeside will begin designing a facility in Colorado to be operated by Palo Verde, LLC, a Colorado State Licensee. The Colorado facility will be designed to allow for parallel testing of the technology solutions as medical and adult-use marijuana is grown commercially, building on a scientific approach to planned variances and control batches. In addition to the Colorado facility, Lakeside plans to implement these solutions in a proposed larger Nevada facility.

Once its cultivation processes are validated and scaled, Lakeside may consider implementing a tissue culture ("TC") lab to underpin and further enhance and standardize the phenotypes in its cultivation processes. TC is a technique widely used in other branches of industrial scale agriculture to produce clones of a plant in a method known as micropropagation. TC rapidly multiplies the infant plant grow tissue, giving rise to enhanced predictability of growth behavior and significant scalability. Lakeside will also consider implementing a licensing model to further increase its market penetration and share.

NHII will use and add value to optimized marijuana cultivation technologies to build smart grows that will ensure Lakeside can be profitable and scalable in an environment where marijuana growing will increasingly be commoditized. NHII will also develop distribution channels within each of the states to further improve the margins and accelerate growth. Colorado and Nevada are the initial two states where Lakeside aims to demonstrate its proof of concept.

**Bulk Oil Production: Palo Verde Facility**
NHII currently produces high-quality, clear, pure marijuana oil. The oils are used by other infused product manufacturers for infusion into edible products. The bulk oil is produced at their Pueblo, CO facility - Palo Verde. Through short-path distillation technology, the facility processes premium quality marijuana oil. The processing method uses ethanol as a solvent to manufacture extracts.

Palo Verde is aggressively accelerating bulk oil extraction and sales. With the help of NHII’s personnel, Palo Verde has been successfully streamlining its processes to maximize oil extraction yield and developing methods to increase throughput capacity. In this regard, NHII has purchased a state-of-the-art distillation plant, manufactured in Germany, which will be leased to Palo Verde and has been delivered to the Pueblo facility. The plant combines a wiped film evaporator and condenser in a single apparatus, and is able to process up to 1.5L of oil per hour into distillate. Once installation is complete, Palo Verde's capacity is expected to increase significantly, driving additional revenue to NHII.

The acquisition of this plant is expected to open up another potential business line of processing low-quality marijuana oil purchased from other marijuana-infused product manufacturers, into premium high-quality distillate. NHII is also in the process of evaluating various options for additional liquid separation/concentration equipment which will further allow Palo Verde to increase its capacity.

In addition to engaging full- and part-time sales personnel, Palo Verde has made additional progress on the sales front by engaging a third party sales team to aid with packaging and product distribution, aiming to secure its market reach in Colorado and facilitate prompt sales of the products as soon as they are manufactured.

Furthermore, NHII is evaluating different strategies for taking advantage of the infrastructure at its Pueblo facility, including potentially "farming out" the empty warehouses and the vacant land to third parties for constructing cultivation facilities. NHII aims to use innovative technologies to build automated cultivation facilities, which provide consistent and genetically stable products. This will allow Palo Verde to further improve the quality of its marijuana-infused products.

Capacity to Operate

NH(PA) has reviewed the available market information and regulations provided by the Pennsylvania Department of Health, and, based on the experience in other jurisdictions, believes that once established, the Commonwealth will provide for a robust wholesale market for MIPs and Oil Extracts, which are the NHII’s core competency. NH(PA) will monitor any potential future changes to the products that the Department may provide in the future.

NH(PA) intends to develop the products in two stages, as follows:

**Phase I – immediately after completing the build-out**

Phase I is focused on building a comprehensive suite of products prepared with CO2 oil extracts using semi-automated manufacturing methods.

- **Solid Marijuana Concentrates.** The products include: kief, bubble hash, shatter, wax,
and other forms of “dabs”. The product will vary by strain types and potencies.

- **Liquid Marijuana Concentrates.** The products include: marijuana oil designated for reusable vaporizer pens, pre-filled vaporizer pen cartridges, tinctures, and capsules.

NH(PA) intends to purchase the following equipment to assist with manufacturing the products in Phase I.

- [Equipment list]

**Phase II**

The focus of Phase II is to expand the offering by including products manufactured with different types of extract, provide products with alternative delivery systems, and provide variations of products that are manufactured using more advanced pharmaceutical-level methods. NH(PA) will also explore ways of improving automation capabilities.

- **Solid Marijuana Concentrates.** Other CO2, extract-based products which require more advanced processing/purifying equipment, and products manufactured with oils that are extracted using an alternative hydrocarbon extraction method.
- **Other MIPs.** Products that use a different delivery marijuana systems (e.g., topical products, creams, transdermal patches, etc.)
- **Liquid Chromatography and Mass Spectrometry Equipment.** To assist with varying the compounds of the final product.

Attachment 24C is the NHII’s 5-year Operating Statement:

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**SECTION 25 – CURRENT OFFICERS**

Provide the position, title in the applicant’s business, and address information for all current officers, directors, partners or trustees.

<table>
<thead>
<tr>
<th>Name and Residential Address</th>
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<tbody>
<tr>
<td>First Name: Vernon</td>
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<tr>
<td>Occupation: Chief Executive Officer</td>
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175
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<tr>
<th>Name and Residential Address</th>
<th>First Name: Billy</th>
<th>Middle Name: Andres</th>
<th>Last Name: Morrison</th>
<th>Suffix:</th>
<th>Occupation: Chief Operating Officer and Director of Cultivation and Extraction</th>
<th>Title in the applicant’s business: Chief Technology Officer and Director of Cultivation and Extraction</th>
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<tr>
<td></td>
<td>First Name: Michael</td>
<td>Middle Name: Winston</td>
<td>Last Name: Bain</td>
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<td>Occupation: Business Consultant</td>
<td>Title in the applicant’s business: Chief Financial Officer</td>
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<td></td>
<td>First Name: Jeffrey</td>
<td>Middle Name: Landon</td>
<td>Last Name: Long</td>
<td>Suffix:</td>
<td>Occupation: Chief Executive Officer</td>
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<td>First Name: Thomas</td>
<td>Middle Name: Joseph</td>
<td>Last Name: Shannon</td>
<td>Suffix:</td>
<td>Occupation: Owner, Security Inc.</td>
<td>Title in the applicant’s business: Director of Security</td>
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<td></td>
<td>First Name: Nickolas</td>
<td>Middle Name: James</td>
<td>Last Name: Brait</td>
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<td>Occupation: Strategic Account Manager</td>
<td>Title in the applicant’s business: Director of Transportation</td>
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Pennsylvania Department of Health
Medical Marijuana Grower/Processor Permit Application

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If more space is required, please submit additional information on other officers in a separate document titled “Current Officers (Contd.)” in accordance with the attachment file name format requirements and include it with the attachments.

Section 26 – Ownership
In this section, list all persons with a controlling interest in the business, defined as follows:

1. For a publicly traded company, voting rights that entitle a person to elect or appoint one or more of the members of the board of directors or other governing board, or the ownership or beneficial holding of 5% or more of the securities of the publicly traded company.
2. For a privately held entity, the ownership of any security in the entity.

Complete the appropriate section(s) below:

A. For C-corporations, S-corporations, LLCs and LLLCs

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<td><strong>Phone:</strong></td>
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## Pennsylvania Department of Health
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Pennsylvania Department of Health
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If more space is required, please submit additional information on other owners of the corporation in a separate document titled “Owners of the Corporations (Contd.)” in accordance with the attachment file name format requirements and include it with the attachments.

### B. FOR PARTNERSHIPS AND LLPs

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**Partner Type:**
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- Other: 

**Percentage of ownership:** 

**Partnership participation from:** MM/DD/YYYY

**Description of participation in operation of the applicant:**

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### C. OTHER PERSONS HOLDING AN INTEREST IN THE PROPOSED SITE OR FACILITY

List any other persons holding an interest in the proposed site or facility, that are otherwise not disclosed in sections A or B.

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Nature, type, terms and conditions of the interest in the applicant:

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If more space is required, please submit additional information on other partners in a separate document titled “INTEREST OF OTHER PARTNERS (CONTD.)” in accordance with the attachment file name format requirements and include it with the attachments.
IF MORE SPACE IS REQUIRED, PLEASE SUBMIT ADDITIONAL INFORMATION ON OTHER PERSONS HOLDING AN INTEREST IN THE PROPOSED SITE OR FACILITY IN A SEPARATE DOCUMENT TITLED “OTHER PERSONS HOLDING AN INTEREST IN THE PROPOSED SITE OR FACILITY (CONT'D.)” IN ACCORDANCE WITH THE ATTACHMENT FILE NAME FORMAT REQUIREMENTS AND INCLUDE IT WITH THE ATTACHMENTS.

**SECTION 27 – CAPITAL REQUIREMENTS**

Provide a summary of your available capital and an estimated spending plan to be used for you to become operational within six months from the date of the issuance of the permit:

**A. Sources and Uses**
Part F – Community Impact
(Scoring Method: 100 Points)

SECTION 28 – COMMUNITY IMPACT

PLEASE BE ADVISED, LETTERS OF RECOMMENDATION OR SUPPORT WILL NOT BE CONSIDERED WHEN EVALUATING THIS SECTION.

PROVIDE A SUMMARY OF HOW THE APPLICANT INTENDS TO HAVE A POSITIVE IMPACT ON THE COMMUNITY WHERE ITS OPERATIONS ARE PROPOSED TO BE LOCATED:

The Applicant takes its responsibility to the local community seriously and will design and enforce security and operational procedures to minimize unwanted behavior in nearby areas. The Applicant will also implement initiatives that enhance the prosperity and vitality of the surrounding community, including the provision of wellness services, and economic revitalization through job creation.

This section will demonstrate that the Applicant has established a Good Neighbor Policy to ensure the safety of the neighborhood and of the Applicant’s employees; a comprehensive employee-community agreement that emphasizes the importance of respecting the local community; and a plan to collaborate with local businesses and charities to act as an agent of positive change and economic revitalization. This section will also provide details as to how all of the initiatives will be operationalized by the Applicant’s employees. This plan is organized in the following sections:

- 
- Employee-Community Agreement
- Social Responsibility

...
Employee-Community Agreements

When cultivation and processing employees are first hired by the Applicant, a Grower/Processor agent will introduce them to Employee-Community Agreements, and explain that by working at this facility, they are committing to honoring these agreements. As demonstrated in dispensaries in California, this procedure promotes mutual respect, patient loyalty, and productive dialogue between parties of interest.

The Applicant’s Employee-Community Agreements will explicitly require that registered patients and caregivers treat all individuals in the area surrounding the facility with respect and courtesy at all times. For example, if a manager observes an employee being rude, disrespectful, or threatening to another person on or around the property, a Security Agent will escort employee off the premises. This zero-tolerance policy is in place to ensure that the facility maintains a positive presence.

Furthermore, employees or visitors who drive to the facility will only be allowed to park in areas that have been designated for use by employees and visitors. The Applicant will provide ample parking to employees and visitors to prevent any traffic
or congestion. By requiring employees and visitors to park in one designated area, the Applicant will be able to better monitor and prevent any efforts to divert medical marijuana. Security agents, as per standard operating procedures, will regularly survey the parking lot to ensure that no cash or medical cannabis is being exchanged or diverted. Through these security measures, the Applicant will cultivate a reputation for being a hardline facility that has no tolerance for illicit behavior of any kind. This will help the Applicant minimize the likelihood of visitors or passersby creating unwanted disturbances.

To prevent disturbances to neighbors of the Grower/Processor, employees will be reminded that they may not medicate in public areas. Pursuant to the Applicant’s standard operating procedures, Security agents will report any violations to the Operations Director, who will take disciplinary measures as needed. No loitering will be permitted on, around, or near the facility.

The Operations Director will instruct all employees to take responsibility for maintaining the cleanliness of the facility and the immediate surrounding area. This will include picking up any stray trash or litter that may be present, as well as reporting any graffiti directly to town officials.

Overall, the Employee-Community Agreements will ensure employees take responsibility for their social impact, and choose actions that maintain a positive atmosphere for the whole.

**Social Responsibility**

It is the Applicant’s social responsibility to initiate community outreach; build long-standing relationships with local businesses and community leaders; and reinvest in the community by sponsoring health, wellness, nutrition, and other charitable causes focused on individuals who need assistance in addressing chemical dependency issues and unemployment.

The Applicant will contribute to the community’s economic revitalization by creating well-paying jobs for a diverse range of community members. As the economy is well into a fundamental transformation of the labor force, the Applicant takes pride in
being able to offer stable jobs and provide the local community with an economic boost. In October 2016, Crawford County reported an unemployment rate of 6.3%, compared to the Commonwealth’s unemployment rate of 5.8%. Furthermore, Crawford County reported the highest rates of unemployment compensation exhaustees—that is, insurance claimants who used all available unemployment benefits before finding work—in the manufacturing industry, coming in at 38% compared to the Commonwealth rate of 15%. Furthermore, the Applicant will provide employees with comprehensive and generous health benefits, a generous sick-leave policy, and career development trainings.

In order to act as an agent for positive change in the neighborhood, the Applicant will collaborate directly with community leaders and organizations to enhance the quality of life for its patients and the surrounding community. The Operations Director will make health and wellness information accessible to both employees and the general public, by operating a facility that is sensitive to State security regulations while also being transparent to the local community. Within the Applicant’s first year of operation, the Applicant will sponsor at least one community outreach or charity event for the general public.

The Applicant is well equipped to provide services that address patients’ specific symptoms as well as their holistic health needs. The Operations Director will develop appropriate partnerships with established organizations to provide workshops and educational material. The Applicant has analyzed statistical data to determine which topics would best serve the surrounding community’s needs, and will design a workshop curriculum based on the issues that present the gravest concern to residents of Crawford County. The Applicant will also use this data to determine which charities to collaborate with and/or donate to. Specifically, the Applicant will offer workshops and educational material on pain management and heroin and opioid prevention and education. By engaging in productive dialogue around the health and safety issues that are pertinent to the general public, the Applicant intends to be a welcoming, knowledgeable, transparent presence in the community.
In line with its vision for overall wellness, the Applicant will seek to partner with local wellness centers, nutrition initiatives, gyms and any organization that promotes health. Upon opening for business, The Applicant will also send a letter of introduction and request for cooperation to several local drug and alcohol treatment providers that it has selected for donations. For example, the Stepping Stones Unit of Meadville Medical Center, which offers both outpatient and inpatient treatment for drug and alcohol abuse, treats individuals and families who are adversely impacted by addiction.
Attachment A: Signature Page

Instructions:
This attachment is the signature page for your application and all other attachments.
- Please review the application
- By checking the appropriate boxes, indicate the sections that are included in your submission
- Print this attachment
- Sign the document (primary contact or registered agent)
- Scan this sheet and save it as a file called “Attachment A,” using the appropriate file name format

By checking “Yes,” you acknowledge that you have read the Medical Marijuana Organization Permit Application Instructions before completing an application for a medical marijuana organization permit.

The applicant hereby submits this application for a Medical Marijuana Organization Permit to the Pennsylvania Department of Health, which consists of the completed application parts and attachments listed below:

FEES:
- Initial Application Fee
- Initial Permit Fee

APPLICATION:
- Completed Application

OTHER ATTACHMENTS:
- Attachment B: Organizational Documents
- Attachment C: Property Title, Lease, or Option to Acquire Property Location
- Attachment D: Site and Facility Plan
- Attachment E: Personal Identification
- Attachment F: Affidavit of Business History
- Attachment G: Affidavit of Criminal Offense
- Attachment H: Tax Clearance Certificates
- Attachment I: Affidavit of Capital Sufficiency
- Attachment J: Sample Medical Marijuana Product Label
- Attachment K: Release Authorization
- Attachment L: Applicant Priorities for Multiple Applications

BACKGROUND CHECKS:
- The applicant has requested background checks, as described in the instructions.
**ADDITIONAL ATTACHMENTS:**

Please list any other documents you are submitting as part of this application:

<table>
<thead>
<tr>
<th>File Name</th>
<th>Name of Document</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH (Pennsylvania) LLC_03202017_Grower-Processor_Section 27_Attachment_Tables</td>
<td>Capital Requirements Attachment of Tables</td>
<td>To supplement Section 27 – Capital Requirements</td>
</tr>
<tr>
<td>NH (Pennsylvania) LLC_03202017_Grower-Processor_Section 24_Attachment_Business History_Images</td>
<td>Business History and Operating Capacity Images</td>
<td>To supplement Section 24 – Business History And Capacity To Operate</td>
</tr>
<tr>
<td>NH (Pennsylvania) LLC_03202017_Grower-Processor_Section 9_Attachment_Employee Qualifications</td>
<td>Employee Qualifications (Continued from Application)</td>
<td>To supplement Section 9 – Business History And Capacity To Operate</td>
</tr>
<tr>
<td>NH (Pennsylvania) LLC_03202017_Grower-Processor_Section 9_Attachment_Guide to Worker Safety FULL REPORT</td>
<td>Guide to Worker Safety and Health in the Marijuana</td>
<td>To supplement Section 9 – Sanitation and Safety</td>
</tr>
</tbody>
</table>

A false statement made in this application is punishable under the applicable provisions of 18 Pa. C.S. Ch. 49 (relating to falsification and intimidation).

[Signature]  
CEO  
03-20-2017  
Date

Vernon Jim Frazier  
Printed Name

A false statement made in this application is punishable under the applicable provisions of 18 Pa. C.S. Ch. 49 (relating to falsification and intimidation).

[Signature]  
CEO  
03-20-2017  
Date

Vernon Jim Frazier
A false statement made in this application is punishable under the applicable provisions of 18 Pa. C.S. Ch. 49 (relating to falsification and intimidation).

[Signature]  
CEO  
03-20-2017  
Signature  
Title in Applicant’s Business  
Date

Vernon Jim Frazier  
Printed Name

A photocopy, facsimile or other electronic version of this document shall be accepted as an original signature.
Attachment B: Organizational Documents

Instructions:
- Attach certified copies of the applicant’s certificate of incorporation, partnership agreement, charter or other such documentation. If the applicant is not organized in Pennsylvania, attach certified copies of documentation that show that the applicant is authorized to do business in Pennsylvania.
- Complete this cover sheet. Scan this sheet and the organizational documents and save it as a PDF file called “Attachment B,” using the appropriate file name format.

| Business Name, as it appears on the applicant’s certificate of incorporation, charter, bylaws, partnership agreement or other legal business formation documents: | NH (Pennsylvania) LLC |
| Trade names and DBA (doing business as) names: | N/A |
| Principal Business Address: | 
| City: | 
| State: Pennsylvania | Zip Code: |
| Phone: | Fax: N/A | Email: |
MANAGEMENT RESOLUTION
OF
NH (PENNSYLVANIA) LLC

The undersigned Organizer of NH (Pennsylvania) LLC a Pennsylvania Limited Liability Company (“the Company”)

DOES HEREBY CERTIFY:

At a general meeting of the member(s) and the organizer of the Company, duly called and held on March 13, 2017 at which a quorum was present and acted throughout, the member(s) unanimously adopted the following resolution, which has not been modified or rescinded:

RESOLVED, that the Company is to be managed by one or more manager who shall have the power to manage the business and affairs of the Company as provided in the Operating Agreement.

The name(s) and address(es) of the initial Manager(s) of the Company, and who shall serve until their successor(s) is/are elected and begin serving, is/are:

Vernon Jim Frazier, Billy Morrison,

FURTHER RESOLVED, that the undersigned hereby resigns as organizer and terminates any and all involvement relative to any and all business activities.

IN WITNESS WHEREOF, the undersigned has hereto affixed their hands as of March 13, 2017.

[Signature]

William Zayac, Organizer
NH (Pennsylvania) LLC

THE BUREAU OF CORPORATIONS AND CHARITABLE ORGANIZATIONS IS HAPPY TO SEND YOUR FILED DOCUMENT. THE BUREAU IS HERE TO SERVE YOU AND WE WOULD LIKE TO THANK YOU FOR DOING BUSINESS IN PENNSYLVANIA.

IF YOU HAVE ANY QUESTIONS PERTAINING TO THE BUREAU, PLEASE VISIT OUR WEBSITE AT www.dos.pa.gov/BusinessCharities OR YOU MAY CONTACT US BY TELEPHONE AT (717)787-1057. INFORMATION REGARDING BUSINESS AND UCC FILINGS CAN BE FOUND ON OUR SEARCHABLE DATABASE AT www.corporations.pa.gov/Search/CorpSearch.

ENTITY NUMBER: [Censored]
Read all instructions prior to completing. This form may be submitted online at https://www.corporations.pa.gov.

Fee: $125  ☐ I qualify for a veteran/reservist-owned small business fee exemption (see instructions)

in compliance with the requirements of 15 Pa.C.S. § 8821 (relating to certificate of organization), the undersigned desiring to organize a limited liability company, hereby certifies that:

1. The name of the limited liability company is: NH (Pennsylvania) LLC
   (designator is required, e.g., "company", "limited", or "limited liability company" or any abbreviation thereof)

2. Complete part (a) or (b) – not both:
   (a) The address of this limited liability company’s registered office in this Commonwealth is:
   (post office box alone is not acceptable)

   Number and Street  City  State  Zip  County

   (b) The name of this limited liability company’s commercial registered office provider and county of venue is:

   c/o Vcorp Services, LLC  Philadelphia

   Name of Commercial Registered Office Provider  County

3. The name of each organizer is (all organizers must sign on page 2):

   William Zayac

4. Effective date of Certificate of Organization (check, and if appropriate complete, one of the following):
   ☐ The Certificate of Organization shall be effective upon filing in the Department of State.
   ☐ The Certificate of Organization shall be effective on: __________________ at __________________.

   Date (MM/DD/YYYY)  Hour (if any)
5. **Restricted professional companies only.**

Check the box if the limited liability company is organized to render a restricted professional service and check the type of restricted professional service(s).

☐ The company is a restricted professional company organized to render the following restricted professional service(s):

☐ Chiropractic
☐ Dentistry
☐ Law
☐ Medicine and surgery
☐ Optometry
☐ Osteopathic medicine and surgery
☐ Podiatric medicine
☐ Public accounting
☐ Psychology
☐ Veterinary medicine

6. **Benefit companies only.**

Check the box immediately below if the limited liability company is organized as a benefit company:

☐ This limited liability company shall have the purpose of creating general public benefit.

Optional specific public benefit purpose. Check the box immediately below if the benefit company is organized to have one or more specific public benefits and supply the specific public benefit(s). See instructions for examples of specific public benefit.

☐ This limited liability company shall have the purpose of creating the enumerated specific public benefit(s):

7. For additional provisions of the certificate, if any, attach 8½ x 11 sheet(s).

IN TESTIMONY WHEREOF, the organizer(s) has (have) executed this Certificate of Organization this

[Signature]

[Signature]
Nutritional High International Inc.  
(formerly Sonoma Capital Inc.)  
Canada  
Incorporated July 19, 2004

Board of Directors: David Posner, Brian Presement, Robert Keel, Adam Szweras, David Caplan, Adam Szweras  
Officers: Jim Frazier - CEO, Amy Stephenson - CFO, Adam Szweras - Corporate Secretary  
Shareholders: Publicly traded company with over 2000 shareholders. No significant (10%+) holders

100%

NHII Holdings Ltd  
(formerly Nutritional High Ltd.)  
Ontario  
Incorporated April 17, 2014  
Name changed May 19, 2016

Board of Directors: David Posner, Adam Szweras  
Officers: David Posner - CEO, Adam Szweras - Secretary/Treasurer

100%

Nutritional High (Colorado) Inc.  
Colorado  
Incorporated May 29, 2014

Board of Directors: David Posner, Adam Szweras  
Officers: David Posner - CEO, Adam Szweras - Secretary/Treasurer

100%

NH Operations LLC  
Nevada  
Incorporated February 14, 2017

Sole Director & Officer: Adam Szweras

100%

NH Nevada LLC  
Nevada  
Incorporated March 13, 2017

Managers/Members: Vernon Jim Frazier and Billy Morrison

100%

NH (Pennsylvania) LLC  
Pennsylvania  
Incorporated March 13, 2017

Managers/Members: Vernon Jim Frazier and Billy Morrison
Advisory Board Members:
Adam Szweras
Alex Storcheus
Hamish Sutherland
Robert Schwartz
David Posner

CEO:
Vernon Jim Frazier

COO:
Billy Morrison
CFO:
Mike Bain Jr.

Director of Operations:
Landon Long

Director of Cultivation:
Billy Morrison

Director of Processing and Extractions:
Landon Long

Director of Transportation:
Nickolas J Brait

Director of Security:
Tom Shannon

Registered grower operators:
None

Registered processor operator:
None

Registered grower employees:
None

Registered processor employees:
None
Attachment C: Property Title, Lease, or Option to Acquire Property Location

Instructions:
- Attach one of the following:
  - Evidence of the applicant's clear legal title to or option to purchase the proposed site and facility
  - A fully-executed copy of the applicant's unexpired lease for the proposed site and facility and a written statement from the property owner that the applicant may operate a medical marijuana organization on the proposed site for, at a minimum, the term of the initial permit
  - Other evidence that shows that the applicant has a location to operate its medical marijuana organization
- Complete this cover sheet. Scan this sheet and the appropriate document(s) and save it as a PDF file called "Attachment C," using the appropriate file name format

| Business Name, as it appears on the applicant's certificate of incorporation, charter, bylaws, partnership agreement or other legal business formation documents: |
| NH (Pennsylvania) LLC |
| Trade names and DBA (doing business as) names: |
| N/A |
| Principal Business Address: |
| City: |
| State: Pennsylvania |
| Zip Code: |
| Phone: |
| Fax: N/A |
| Email: |
Attachment F: Affidavit of Business History

Instructions:

- Each principal or operator of the applicant must complete the Affidavit of Business History.
- Execute the affidavit and save as a PDF file called "Attachment F," using the appropriate file name format. A cover sheet is not needed.
Affidavit of Business History

State of Florida
County of Brevard

The undersigned, Vernon Jim Frazier, hereby certifies the following:

During the 10 years preceding the filing date of the initial permit application, the following principal(s), operator(s), financial backer(s) and employee(s), have held a position of management or ownership of a controlling interest in any other business in this Commonwealth or any other jurisdiction involving the manufacturing or distribution of medical marijuana or a controlled substance:

<table>
<thead>
<tr>
<th>Name of Individual</th>
<th>Role (principal, operator, financial backer or employee)</th>
<th>Business name and address</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billy A. Morrison</td>
<td>Principal Operator</td>
<td>The Union Collective</td>
<td>2007-2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1390 Market St</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>San Francisco, CA 94102, USA</td>
<td></td>
</tr>
<tr>
<td>Billy A. Morrison</td>
<td>Principal Operator</td>
<td>Peloton Pharma</td>
<td>2011-2014</td>
</tr>
<tr>
<td></td>
<td></td>
<td>243 Boul Hymus</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pointe-Claire, QC H9R</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1G3, Canada</td>
<td></td>
</tr>
<tr>
<td>Billy A. Morrison</td>
<td>Principal</td>
<td>Nutritional High</td>
<td>2015-Present</td>
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<tr>
<td></td>
<td></td>
<td>International Inc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>77 King St. W., Suite</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2905</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Toronto, ON M5K</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1H1, Canada</td>
<td></td>
</tr>
<tr>
<td>Vernon Jim Frazier</td>
<td>Principal</td>
<td>Nutritional High</td>
<td>2016-2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>International Inc.</td>
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<tr>
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<td></td>
<td>77 King St. W., Suite</td>
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<td>Toronto, ON M5K</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1H1, Canada</td>
<td></td>
</tr>
<tr>
<td>Vernon Jim Frazier</td>
<td>Principal</td>
<td>Nutritional High</td>
<td>2016-Present</td>
</tr>
<tr>
<td></td>
<td></td>
<td>International Inc.</td>
<td></td>
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<tr>
<td></td>
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<td>77 King St. W., Suite</td>
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<td></td>
<td>Toronto, ON M5K</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1H1, Canada</td>
<td></td>
</tr>
<tr>
<td>J. Landon Long</td>
<td>Founder</td>
<td>Infusion Factory</td>
<td>2016-Present</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35367 Fircrest Street</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Unit B</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Position</td>
<td>Address</td>
<td>Role</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------</td>
<td>----------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>J. Landon Long</td>
<td>Founder</td>
<td>Infusion Wellness 35367 Fircrest Street - Unit B Newark, CA 94560, USA</td>
<td>Member</td>
</tr>
<tr>
<td>Tom Shannon</td>
<td>Founder</td>
<td>MAX Security Inc. 2171 South Trenton Way, Suite 226 Denver, CO 80231, USA</td>
<td>Chief Executive Officer</td>
</tr>
</tbody>
</table>

I hereby certify that I am authorized to execute this affidavit on behalf of the applicant and that the information contained herein is true and correct and that there is no misrepresentation, falsification or omissions in this affidavit. I am further aware that any false or misleading statement or omitted information is punishable under the applicable provisions of 18 Pa. C.S. Ch. 49 (relating to falsification and intimidation).

[Signature]

Signature of Affiant and Title

Date: 3-17-2017

Sworn to and subscribed before me this 17 day of March, 2017.

[Signature]

Notary Public

MY COMMISSION EXPIRES:

A photocopy, facsimile or other electronic version of this document shall be accepted as an original signature.
Attachment G: Affidavit of Criminal Offense

Instructions:
- Each principal or operator of the applicant must complete the Affidavit of Criminal Offense.
- Execute the affidavit as instructed and save as a PDF file called "Attachment G," using the appropriate file name format. A cover sheet is not needed.
Affidavit of Criminal Offense

State of Florida )
County of Brevard )

The undersigned, Vernon Jim Frazier, hereby certifies the following by checking the boxes below:

Principal(s):

☒ No principal(s) listed in this permit application have been convicted of a criminal offense graded higher than a summary offense.

☐ One or more principals listed in this permit application have been convicted of a criminal offense graded higher than a summary offense.

If one or more principal(s) listed in this permit application has been convicted of a criminal offense graded higher than a summary offense, please provide below the name(s) of the principal(s) and the offense(s) of which one or more principal(s) was convicted.

Name(s): __________________________________________
Offense(s): ______________________________________

Operator(s):

☒ No operator(s) listed in this permit application have been convicted of a criminal offense graded higher than a summary offense.

☐ One or more operator(s) listed in this permit application has been convicted of a criminal offense graded higher than a summary offense.

If one or more operator(s) listed in this permit application has been convicted of a criminal offense graded higher than a summary offense, please provide below the name(s) of the operator(s) and the offense(s) of which one or more operator(s) was convicted.

Name(s): _________________________________________
Offense(s): ______________________________________

Financial Backer(s):

☒ No financial backer(s) listed in this permit application have been convicted of a criminal offense graded higher than a summary offense.
☐ One or more financial backer(s) listed in this permit application have been convicted of a criminal offense graded higher than a summary offense.

If one or more financial backer(s) listed in this permit application have been convicted of a criminal offense graded higher than a summary offense, please provide below the name(s) of the financial backer(s) and the offense(s) of which one or more financial backer(s) was convicted.

Name(s): __________________________
Offense(s): __________________________

Signature of Affiant and Title __________________________
Date 3/16/2017

Sworn to and subscribed before me this 10 day of March, 2017.

__________________________
Notary Public

MY COMMISSION EXPIRES:

A photocopy, facsimile or other electronic version of this document shall be accepted as an original signature.
Attachment I: Affidavit of Capital Sufficiency

Instructions:

- The applicant must submit an affidavit stating that the applicant meets the capital requirements set forth in §1141.30 (relating to capital requirements).
- Note that there are two different versions below:
  - Attachment I-1 is the affidavit for a grower/process applicant
  - Attachment I-2 is the affidavit for a dispensary applicant
- Execute the appropriate affidavit and save as a PDF file called "Attachment I," using the appropriate file name format. A cover sheet is not needed.
ATTACHMENT I-1: AFFIDAVIT OF CAPITAL SUFFICIENCY FOR A GROWER/PROCESSOR PERMIT APPLICANT

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH

AFFIDAVIT OF CAPITAL SUFFICIENCY

State of ___________________________ )
County of ___________________________ ) ss:

I/WE _______ Amy Stephenson

ADDRESS

CITY ___________ STATE ___________ ZIP CODE ___________ COUNTY ___________

PHONE

For the following applicant:

NH (Pennsylvania) LLC

NAME OF BUSINESS

ADDRESS

CITY ___________ PA ___________ ZIP CODE ___________ Crawford

PHONE

on deposit with one or more financial institutions, as follows (capital may include cash or securities, real estate, or other assets):
<table>
<thead>
<tr>
<th>Type of Capital</th>
<th>Source of Capital</th>
<th>Total Value of Capital</th>
<th>Value not encumbered by debt or other obligations</th>
<th>If on deposit, name and address of financial institution</th>
<th>If on deposit, account number</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

I hereby certify that I am authorized to execute this affidavit on behalf of the applicant and that the information contained herein is true and correct and that there is no misrepresentation, falsification or omissions in this affidavit. I am further aware that any false or misleading statement or omitted information is punishable under the applicable provisions of 18 Pa. C.S. Ch. 49 (relating to falsification and intimidation).

Signature of Affiant and Title: ___________________________  Date: __________ 2017

Sworn to and subscribed before me this ___ day of March, 2017

Notary Public: ___________________________

My Commission Expires: __________

A photocopy, facsimile or other electronic version of this document shall be accepted as an original signature.
ATTACHMENT I-1: AFFIDAVIT OF CAPITAL SUFFICIENCY FOR A GROWER/PROCESSOR PERMIT APPLICANT

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF HEALTH

AFFIDAVIT OF CAPITAL SUFFICIENCY

State of __________________________
County of __________________________

Affidavit of Capital Sufficiency

I, WE, KURT A. MARTY, CPA

Address
City: __________________________
State: __________________________
ZIP Code: __________________________
County: __________________________

For the following applicant:
NAME OF BUSINESS
NH (Pennsylvania) LLC

Address
City: __________________________
State: __________________________
ZIP Code: __________________________
County: __________________________

I hereby certify that funds in the amount of $__________ are
on deposit with one or more financial institutions, as follows (capital may include cash or
securities, real estate, or other assets):
<table>
<thead>
<tr>
<th>Type of Capital</th>
<th>Source of Capital</th>
<th>Total Value of Capital</th>
<th>Value not encumbered by debt or other obligations</th>
<th>If on deposit, name and address of financial institution</th>
<th>If on deposit, account number</th>
</tr>
</thead>
</table>

I hereby certify that I am authorized to execute this affidavit on behalf of the applicant and that the information contained herein is true and correct and that there is no misrepresentation, falsification or omissions in this affidavit. I am further aware that any false or misleading statement or omitted information is punishable under the applicable provisions of 18 Pa. C.S. Ch. 49 (relating to falsification and intimidation).

[Signature]
Signature of Affiant and Title

Date

Sworn to and subscribed before me this 14th day of March, 2017.
A photocopy, facsimile or other electronic version of this document shall be accepted as an original signature.
Attachment J: Sample Medical Marijuana Product Label

Instructions:
- Provide a sample label for each medical marijuana product you expect to produce
- Complete this cover sheet. Scan this sheet and the sample labels and save it as a PDF file called "Attachment J," using the appropriate file name format

<table>
<thead>
<tr>
<th>Business Name, as it appears on the applicant's certificate of incorporation, charter, bylaws, partnership agreement or other legal business formation documents:</th>
</tr>
</thead>
<tbody>
<tr>
<td>NH (Pennsylvania) LLC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trade names and DBA (doing business as) names:</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Principal Business Address:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[redacted]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City:</th>
<th>State: Pennsylvania</th>
<th>Zip Code: [redacted]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[redacted]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phone:</th>
<th>Fax: N/A</th>
<th>Email:</th>
</tr>
</thead>
<tbody>
<tr>
<td>[redacted]</td>
<td></td>
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Attachment K: Release Authorization

Instructions:
- Execute the following release authorization
- Scan the completed and executed release authorization below save it as a PDF file called "Attachment K," using the appropriate file name format. No cover sheet is needed
RELEASE AUTHORIZATION

TO: ____________________________________________________________
(Do not write above this line – For Department of Health Only)

FROM: NH (Pennsylvania) LLC

Applicant's Name

1. Vernon Jim Frazier, by and on behalf of the undersigned applicant, have filed a permit application with the Pennsylvania Department of Health ("Department"). I certify that I am authorized by the applicant to submit this Release Authorization on its behalf and to bind the applicant to all provisions within this Release Authorization. I understand that the applicant is seeking the granting of a privilege and acknowledge that the burden of proving the applicant's qualifications and suitability for a favorable determination is at all times the burden of the applicant.

I understand that a background investigation may be conducted by the Department pursuant to its statutory duty to investigate the character, honesty, integrity and suitability of myself and any entity with which I am associated. I further understand and agree that I am voluntarily executing this Release Authorization to expressly authorize and permit the Department to obtain any and all information it deems necessary, and accept any risk of adverse public notice, embarrassment, criticism, or other action or financial loss which may result from action with respect to this permit application.

The rights and powers herein are granted to facilitate the background investigation being conducted by the Department at my request and on behalf of the applicant and is not otherwise intended to create or establish a legal or fiduciary relationship between the Department, its agents and employees, and me. I hereby acknowledge that no such relationship exists.

1. I hereby authorize and request every person, firm, company, corporation, board, association or institution of any kind, and every Federal, state or local government entity, including but not limited to every court, law enforcement agency, criminal justice agency or probation department, without exception, both foreign and domestic, to whom this Release Authorization is presented having any knowledge, information, documents, forms, photographs, computer files, accounts, ledgers or other items about, relating to or concerning the applicant and to fully discuss with and answer any inquiry made by any duly authorized investigator of the Pennsylvania Department of Health.

2. If this Release Authorization is presented to any brokerage firm, bank, savings and loan, or other financial institution or officer of same, I hereby authorize and request any and all documents, records or correspondence pertaining to the applicant, including but not limited to past loan information, notes, checking account records, savings deposit records, safe deposit box records, passbook records and general ledger folio sheets.

3. I hereby authorize an agent of the Department to obtain and review copies of any and all documents, records or correspondence pertaining to myself and the applicant, and I hereby authorize any Federal, state or municipal agency or body, law enforcement agency or criminal justice agency or department, tax agency or authority, regulatory agency, authority or body, to make full and complete disclosure of any and all information and documents including, but not limited to, documents and information otherwise privileged or not subject to public disclosure, as well as other information on file or available concerning the applicant.

4. This Release Authorization extends to the review and copy of any information protected by law or contact from disclosure, privilege or obligation.

5. I do for the applicant, as well as for myself, my heirs, executors, administrators, successors and assigns, hereby release, remise, exonerate and forever discharge the Department, its members, agents and employees, the Commonwealth of Pennsylvania and its instrumentalities, and any agents and employees
thereof, from any and all liabilities including but not limited to all manner of actions, causes of action, suits, debts, judgments, executions, claims, and demands whatsoever, known and unknown, in law or equity, which exist now or in the future against those entities and persons other than relating to a willfully unlawful disclosure or publication of material or information acquired during my investigation.

6. I do for the applicant, as well as for myself, my heirs, administrators, successors and assigns, hereby release, remise, exonerate and forever discharge every person, firm, company, corporation, board, association or institution of any kind, and every Federal, state or local government entity, including but not limited to every court, law enforcement agency, criminal justice agency or probation department, without exception, both foreign and domestic, to whom this request is presented, and any agents or employees thereof, from any and all liabilities, including but not limited to all manner of actions, causes of action, suits, debts, judgments, executions, claims and demands whatsoever, known or unknown, in law or equity, which exist now or in the future against those entities and persons to whom this request is presented, and any agents or employees thereof, arising out of or by reason of the furnishing or inspection of documents, records or other information released in compliance with a request made pursuant to, or as a result of, having been presented with, this Release Authorization.

7. The applicant agrees to indemnify and hold harmless the Department, its officials and employees and every person, firm, company, corporation, board, association or institution of any kind, and every Federal, state or local government agency, to whom this request is presented and form against all claims, damages, losses, and expenses including reasonable attorneys' fees arising out of or by reason of, the acts permitted and provided for in the Release Authorization.

8. I agree that a reproduction of this request by photocopy, facsimile or other similar process shall be for all intents and purposes as valid as the original.

IN WITNESS WHEREOF, I have executed this Release on this ___ day of 2017.

Authorized Signatory

STATE OF ____________ COUNTY OF ____________

On this ___ day of 2017, before me, a Notary Public, personally appeared (known to me or satisfactorily proven) to be the person whose name is subscribed in this Release, and acknowledged that he/she executed the same for the purposes herein contained.

IN WITNESS THEREOF, I hereunto set my hand and official seal.

Notary Public

MY COMMISSION EXPIRES:

[Notary Public Seal]
Attachment to Employee Qualifications

1. Operator/Employee: Director of Transportation

This role is filled by Nickolas J. Brait.

Role:

The Director of Transportation oversees all employees and operations involving the transportation of medical marijuana products to third-party state-licensed grower/processors and dispensaries. Duties include monitoring chain of custody of medical marijuana products through the electronic tracking system, logistical route planning, and assignment and compliance of transportation vehicles.

Responsibility: Ensure continuous compliance with the Department.

Duties:

• Monitor regulatory updates from the Department of Health, and in the event that any relevant regulations change, update all equipment and procedures

• In the event of any updates to checklists and procedures, coordinate with the other Directors to ensure all employees are trained on updated materials

• Train all employees on the proper safety and security procedures that have been adopted by the Applicant

Responsibility: Setting the direction for the transportation team

Duties:

• Coordinate with the Directors of Operations, Cultivation, and Processing to ensure sufficient resources in order to provide transportation services as needed

• Establish transportation protocols that promote driver safety, and operate in complete compliance with all applicable regulations

• Oversee the development and maintenance of a delivery fleet or negotiate with a third-party vendor for vehicles for delivery purposes

• Book any third-party verified and state-licensed sub-contractors and ensure they deliver within agreed terms.

• Hire transportation managers and employees with the requisite skills

• Establish training requirements and oversee training

• Direct all transportation activities

• Develop transportation relationships

• Monitor transport costs

• Negotiate and bargain transportation prices

• Deal with the effects of congestion
• Confront climate change issues by implementing transport strategies and monitoring the organization’s carbon footprint.

Responsibility: Evaluating new opportunities to improve the processing protocols

Duties:
• Maintain and expand knowledge of all associated technical practices
• Review and monitor processing operations and identify opportunities for efficiency improvements

2. Operator/Employee: Director of Security

This role is filled by Tom Shannon.

Role:
The Director of Security plans, directs and coordinates activities relating to the protection, safeguarding and company assets, employees, invitees and others; ensures that established goals and objectives are accomplished within prescribed priorities, time limitations, and fiscal responsibilities; advises, makes recommendations, and assists in the formulation of goals and objectives; designs, implements and monitors security policies, procedures and programs; complies with federal, state and local legal regulations; and exercises independent judgment in the course of carrying out overall responsibilities and other activities as assigned.

Responsibility: Ensure continuous compliance with the Department.

Duties:
• Monitor regulatory updates from the Department of Health, and in the event that any relevant regulations change, update all equipment and procedures
• In the event of any updates to checklists and procedures, coordinate with the other Directors to ensure all employees are trained on updated materials
• Control the issuance of all locks and keys

Responsibility: Setting the direction for the security team

Duties:
• Oversee the security team to ensure it does not itself become a risk factor
3. **Operator/Employee: Director of Quality Assurance**

**Role:**

The Director of Quality Assurance establishes quality and reliability standards by studying product and consumer requirements with other members of management and with production operators, technicians, and engineers. He establishes and monitors standards by devising inspection and physical testing methods and procedures and daily inspection and calibration of equipment that is used within the facility for the production of medical marijuana products. He coordinates with any state-certified laboratories to ensure safety, consistency, and quality of medical marijuana products.

**Responsibility:** Ensure continuous compliance with the Department.

**Duties:**

- Monitor regulatory updates from the Department of Health, and in the event that any relevant regulations change, update all equipment and procedures
- In the event of any updates to checklists and procedures, coordinate with the other Directors to ensure all employees are trained on updated materials
- Responsibility: Establishing quality assurance (QA) and quality control (QC) procedures
- Coordinate with the Director of Operations to ensure appropriate standards are established and implemented throughout all Applicant departments
- Work with the Director of Processing and Extraction to establish and oversee stability testing, validation tests, and other documentation that verifies product safety and consistency; and otherwise maintain product quality and safety
- Monitor and enforce the implementation of all QA and QC procedures
- Establish training requirements and oversee training
- Oversee the Manager of Product Recalls

**Responsibility:** Oversee all sanitation procedures to ensure continuous compliance

**Duties**
• Ensure all sanitation requirements, as described in Section 20, Sanitation, are continuously met

• Review and complete the Checklist for Facility Standards to ensure that all facility facilities are compliant with the standards promulgated by §1151.33 of the Pennsylvania Code, as well as the FDA Model Food Code.

• Obtain certification as ServSafe Food Protection Manager

• Establish and oversee adherence to standard cleaning procedures for all buildings and equipment used to store medical marijuana

Responsibility: Determine if hazards are present that necessitate the use of personal protective equipment (PPE).
Duties:

• Produce a written document that certifies that the workplace has been evaluated and the date of the evaluation

• Create and implement any work practices necessary to prevent employee exposure to hazard

• Make a final determination as to whether or not PPE may reduce or eliminate the potential for injury or illness.

• Select the appropriate PPE and train employees in the following information:
  o What PPE is required
  o When to use PPE
  o When to properly use the assigned PPE, including how to put on, take off, and adjust it
  o The PPE’s limitations
  o How to properly care for, maintain, clean and dispose of the PPE

Responsibility: Ensure proper calibration of equipment.
Duties:

• Establish standards for calibration based on appropriate standards

• Maintain a log of maintenance and calibration procedures performed for the previous five years for all scales/balances/other measurement devices

Responsibility: Arrange for and oversee storage and disposal of hazardous waste.
Duties:
• Contract with a hazardous waste transporter with a valid license issued by the Pennsylvania Department of Environmental Protection.

• Complete and submit a Hazardous Waste Pickup Request Form to initiate pickup services.

• Ascertain what the average turnaround time for pickups from the day the Hazardous Materials Pickup Request Form was submitted to the day that the transporter arrives, and factor this turnaround time into the determination of when to submit a request.

• Verify that the temperature and humidity of the hazardous waste storage spaces shall be maintained at an appropriate level for the contents, and shall be monitored to ensure ranges are always within acceptable limits.

• Conduct periodic inspections, at least monthly, to ensure all materials are properly stored. All such inspections shall be logged. All records pertaining to hazardous materials shall be maintained for at least five years.

• Oversee the maintenance of the correct amount of butane per square foot to ensure compliance with State and local regulations.

4. **Operator/Employee: HR Manager**

   **Role:**

   The HR Manager handles administrative responsibilities associated with personnel decisions and the implementation of benefits, along with the implementation of the Applicant’s diversity plan.  

   **Responsibility: Develop and administer various Human Resource programs and company policies**

   **Duties:**

   • Conduct training as needed on various HR related topics
   • Manage and resolve complex employee relations issues.
   • Provide advice and counsel to management regarding employee concerns, policy interpretation and administration of employment laws.
   • Oversee government, legal, and regulatory compliance.
   • Develop workforce planning, talent acquisition, and on-boarding programs.
   • Monitor and improves employee retention.
   • Oversee HR admin and receptionist.
Responsibility: Design and oversee effective implementation of the Applicant’s Diversity Plan.

Duties:

• Design and oversee effective implementation of the Applicant’s Affirmative Action Plan

• Keep the Department informed of equal opportunity and diversity progress through an annual report.

• Compile and maintain all materials evidencing the Applicant’s affirmative action efforts

• Retain any written reports and referenced exhibits developed or created as a result of a discrimination investigation that relates to a dispensary

• Use the US census and other reliable sources of data to determine the internal and external availability for the Affirmative Action Plan.

• Create placement goals based on the Applicant’s current utilization of the available workforce.

• Identify areas of concern in the Applicant’s hiring, promotion, transfer, and termination processes.

• Review various personnel activities to ensure nondiscrimination and equal employment opportunity for all individual.

• Maintain copies of key personnel documents as a component of the Applicant’s internal audit process

• Report the status of the Applicant’s goals and objectives to all of the Principals, and to the Department.

• Distribute information regarding job opportunities to the Applicant’s database, with the intention of achieving a diverse pool of applicants.

• Arrange to have annual community forums with local communities of interest, such as veterans groups and disability justice organizations.

• Evaluate the results of each outreach and recruitment event to see if it is producing measurable results.

• Monitor all dispensaries to ensure that all dispensary agents are given the opportunity to participate in all programs for advancement.

• Designate a space, other than a bathroom, that is shielded from view and free from intrusion from co-workers and patients for nursing employees.
Responsibility: Serve as employee-liaison for accommodation requests.

Duties:

• Receive training in how to recognize and process an accommodation request.
• Facilitate requests for reasonable accommodation from applicants or employees with disabilities.
• Document accommodation efforts.

Responsibility: Assist Operations Director in the provision of inclusive and efficient Diversity Training.

Duties:

• Collect and review exit surveys from employees who have completed the Diversity Training

Responsibility: Leadership Development

Duties:

• Develop employees for advancement within the company, and to encourage employees to attend courses and workshops that may enable them to qualify for current or future open positions.

Responsibility: Inclusive facilities

Duties:

• Ensure that employees are provided a reasonable break time to express breast milk for a nursing child for one year after the child’s birth at each time such employee has need to express milk.
5. Operator/Employee: Manager of Cultivation

Role:
The Manager of Cultivation is responsible for oversight of the cultivation facility including propagation, vegetation and/or flowering of medical marijuana plants. The Manager of Cultivation will provide oversight of all Employees and ensure that the facility is safe and compliant with OSHA, state, and federal regulations at all times. The Manager of Cultivation is responsible for ensuring all company policies are upheld and all company-provided standard operating procedures are adhered to. The Manager of Cultivation reports to the Director of Cultivation.

In addition to the responsibilities below, may also fulfill the requirements of a Cultivation Technician, as described below.

Responsibility: Monitor day-to-day cultivation operations and cultivation technicians

Duties:

• Ensure all cultivation employees follow SOPs pertaining to the cultivation of marijuana plants
• Manage a large-scale cultivation operation with various grow lights
• Develop and/or maintain cultivation protocols and nutrient regiment, with the approval of the Director of Cultivation
• Manage cultivation technicians in the completion of all required cultivation-related tasks, from seed to curing
• Manage plant scheduling and organization to precisely project all garden needs on a daily, weekly, and monthly basis to keep garden green and expenses low
• Maintains proper plant counts, tracking information for inventory and over facility compliance
• Maintain a clean and organized work environment
• Oversee cultivation technicians and monitor for signs of diversion
• Maintains the efficiency of all necessary steps and procedures of the manufacturing and addresses any issues of which may arise
• Maintains and monitors all plants and plant health throughout every stage in the facility
• Responsible for employee and manager relations, production and management – disciplines and acknowledges employees appropriately
• Ensures all new employees and managers are trained in proper and preferred plant care techniques
• Identifies and corrects all plant-related problems deficiencies
• Displays knowledge, leadership and guidance to all manufacturing employees
• Maintain cultivation facility procedures
• Ensure all weighing and recording of data is accurate
• Oversee all sanitization of equipment
• Assist in ensuring all cultivation procedures are executed properly
• Schedule all manufacturing duties for all stages and aspects of growth
• Ensure cultivation facility is consistently stocked with appropriate supplies
• Responsible for scouting all equipment, ensuring all tools are free of pests, viruses or disease
• Encourage accuracy and thoroughness in order to promote quality
• Preserve quality product standards of excellence
• Support the HR Manager with the implementation of Section 3, Diversity

6. **Operator/Employee: Manager of Processing and Extraction**

**Role:**
The Manager of Processing and Extraction will support the Director of Processing and Extraction. The Manager has direct oversight of all processing and extraction employees to ensure that all employees are following company and safety guidelines when producing medical marijuana products.

**Responsibility: Day-to-day management of the Processing and Extraction**

**Duties:**
• Meet all extraction production weekly goals
• Implement employee work schedule for maximum production and efficiency
• Oversee all employee training and maintain accurate training records
• Verify proper SOPs are being followed at all times
• Ensure all products are made in a timely fashion with quality standards
• Organize and schedule production lines
• Ensure compliance to cGMP and cGDP by all personnel
• Ensure that personnel follow all applicable company policies and procedures
• Resolve conflict and problems in a timely professional manner
• Ensure all employees have a safe and healthy working environment
• Ensures and reviews all official documentation to implement and oversee preventative and corrective actions from deviations in cGDP, cGMP, procedures, policies, and production processes
• Implement continual process improvement to increase extraction capacity and efficiency
• Ensure that production of hemp oil intermediates is consistent and timely
• Plan extraction schedule, for review and validation by the Director of Processing and Extraction
• Ensure that quality systems are implemented and complied with; includes cleaning records, batch records, SOP training, deviation reports, etc.
• Make sure all documents and other materials needed are in place
• Consider and implement extraction team members’ concerns, suggestions, and ideas for extraction process improvement
• Maintain the inventory tracking system throughout the extraction process
• Ensure that all extraction equipment is maintained and in proper working order
• Communicate with extraction team effectively regarding company policy updates, position changes, hiring, and personnel changes
• Maintain records for all calibration and maintenance operations performed
• Support the HR Manager with the implementation of Section 3, Diversity

7. **Operator/Employee: Manager of Packaging and Labeling**

**Role:**
The Manager of Packaging and Labeling will ensure that all employees are following company standard operating procedures and state regulations regarding the packaging and labeling of medical marijuana products, quality assurance processes, and appropriate storage. Reports to the Director of Operations.

**Responsibility: Day-to-day management of Packaging and Labeling**

- Oversee all packaging and labeling technicians
- Research and recommend safe and appropriate packaging for different product types
- Verify the regulatory compliance of all proposed packaging and labeling
- Ensure all packages and labels receive Department approval before ordering in bulk
• Maintain the compliance of all packaging and labeling, with updates in the event of regulatory changes or requirements from the Department
• Plan schedules for all packaging and labeling, and coordinate with the Director of Transportation to ensure all required packaging and labeling operations will be complete in advance of scheduled shipments
• Manage all packaging and labeling paperwork and administration
• Oversee all employee training and maintain accurate training records
• Support the HR Manager with the implementation of Section 3, Diversity

8. **Operator/Employee: Manager of Transportation**

**Role:**

The Manager of Transportation is responsible for managing the execution, direction, and coordination of all transportation matters within the organization. This includes managing budgets, organizing schedules & routes, ensuring that vehicles are safe and meet legal requirements, and making sure that drivers are aware of their duties.

**Responsibility:** Oversee day-to-day operations pertaining to transportation of medical marijuana and medical marijuana products.

**Duties:**

• Lead and direct a team of professional drivers
• Manage daily service requirements and client relationships
• Manage all transportation and logistics for shipments to customers
• Monitor transportation costs and target areas that yield improvements and cost savings
• Recruit, train and motivate a team of drivers
• Provide accurate and timely reports
• Work closely with vendors
• Ensure all third-party delivery drivers comply with the requirements for medical marijuana deliveries under the regulations promulgated by the Department
• Allocate and record resources and movements on the transport planning system

• Ensure all partners in the supply chain are working effectively and efficiently to ensure smooth operations

• Communicate effectively with clients and responding to their requirements

• Support the HR Manager with the implementation of Section 3, Diversity

Responsibility: Oversee Shipping/Receiving of Medical Marijuana Products

Duties:

• Typically, this role will be held by an employee with another role, likely within the Quality Assurance team. The Applicant’s goal is to minimize the necessity for product recalls through the development of quality products and consistent and reliable product formulations.

Role:

The Manager of Product Recalls will supervise any product recalls associated with tampered, expired, or products otherwise deemed unusable. This will include working with Department, Grower/Processors, Dispensaries, and/or medical marijuana patients that have received the product to address any concerns and take the action necessary for the product recall.
Responsibility: Implementing product recall procedures when necessary

Duties:

• Report to the Director of Quality Assurance
• Upon initiation of a product recall by the Department, follow the Applicant’s product recall steps
• Monitor news feeds or Department notifications to identify any product recalls within Pennsylvania’s medical marijuana industry; upon news of any such product recall, evaluate the story for clues as to the cause that necessitated the recall, and initiate an internal process to establish that standard operating procedures are in place that will prevent, or if necessary mitigate the risk, of a similar occurrence internally
• Liaise with permitted dispensaries about any adverse reactions; evaluate the reactions and escalate to the Director of Quality Assurance or to the Department as appropriate
• Support the HR Manager with the implementation of Section 3, Diversity

10. Employee: Grower/Processor Employee

Employees may hold multiple roles. Some may act part-time as a quality control technician, and part-time as a processor technician. Others may double as cultivation technician and delivery personnel. Regardless of the specific responsibilities of each of these roles, all employees who operate on-site at the Applicant’s facility must meet the following requirements.

Responsibility: Maintaining continuous compliance

Duties:

• Implement standard operating procedures correctly, in accordance with all plans and procedures, including at minimum those that comply with:
  o Section 3, Diversity
  o Section 11, Transportation
  o Section 12, Storage
  o Section 13, Packaging and Labeling
  o Section 14, Inventory Management
  o Section 15, Disposal
  o Section 17, Pesticides and Growing Methods
  o Section 18, Nutrients
o Section 19, Processing
o Section 20, Sanitation
o Section 22, Recordkeeping
o Section 28, Community Impact

- Support the maintenance of an up-to-date on-site employee manual
- Take ownership of compliant operations
- Undertake initial training prior to beginning work at the facility. This training period will include the mandatory two-hour training developed by the Department of Health, as well as detailed Applicant-specific training on compliance, diversion prevention, applicable laws, policies and procedures.
- Receive annual training refresher courses, as well as ad hoc training when regulations, research, or procedures change
- Undertake ASA’s Patient-Focused Certification training within one calendar year of employment
- Undertake training based on Colorado’s “Guide to Worker Safety and Health in the Marijuana Industry” (See Additional Attachments)
- Undertake Pennsylvania ServSafe certification

11. Employee: Cultivation Technician

Role:
Perform day-to-day cultivation responsibilities under the direction of the Manager of Cultivation.

Responsibility: Day-to-day cultivation tasks

Duties:
- Perform all the tasks in the grow including: cloning, transplanting, feeding plants, defoliation, super cropping, topping, flushing, foliar and preventative sprays, trimming, packaging, waste disposal and inventory management.
- Manage marijuana plants, giving each individual plant the attention it needs one at a time.
- Catalog and analyze each individual strain from clone to flower to harvesting
• Clone and manage vegetation with at least a 90% success rate
• Execute preventative maintenance and elimination of all types of mold, powdery mildew, spider mites, root aphids, fungus gnats, etc
• Cutting clones and transplanting plants, filling reservoirs, propagation, fertilization and pest management
• Cleaning growing medium and equipment maintenance
• Testing PH-Levels of all nutrient solutions
• Testing potency in Parts Per Million (PPM) of all nutrients used
• Moving plants within the warehouse
• Mixing nutrient solutions and watering plants
• Harvesting mature plants
• Other duties as assigned

Responsibility: Ensure continuous compliance

Duties:
• Implement all requirements for employees under Section 17 Pesticides and Growing Methods, Section 18 Nutrients, and all other relevant requirements
• Report any personal health condition that might compromise the cleanliness or quality of the medical marijuana that the employee might handle
• Report any fellow employee that is demonstrating any of the symptoms or conditions identified in the Personal Health, Hygiene, and Cleanliness handout

12. Employee: Processor Technician

Role:
Perform day-to-day processing and extraction responsibilities under the direction of the Manager of Processing and Extraction.

Responsibility: Day-to-day processing and extraction tasks
• Preparing equipment and plant materials for extraction
• Operating highly sophisticated extraction equipment
• Processing concentrates and extracts
• Cleaning and maintenance of extraction equipment and laboratory facility.
• Maintaining strict inventory records of all plant materials, chemicals and equipment used in the laboratory.
• Operating, maintaining, and making adjustments and repairs to laboratory equipment such as liquid chromatography systems, pumps, microscopes, balances, centrifuges, and other laboratory equipment
• Maintaining inventory records of supplies, materials, and equipment, and preparing requisitions as needed.
• Storing supplies and equipment, disposal of waste according to guidelines, and keeping laboratory, storerooms and working areas immaculate.
• Washing and sterilizing laboratory glassware.
• Performing clerical work related to laboratory activities such as word processing, record keeping, filing, and answering telephone inquiries.
• Maintaining material safety data sheets for all department chemicals and products.
• Troubleshoot equipment, manage calibration and preventative maintenance processes; which include documentation, calibration, maintaining spare parts inventory

Responsibility: Ensure continuous compliance

Duties:
• Implement all requirements for employees under Section 17 Pesticides and Growing Methods, Section 18 Nutrients, and all other relevant requirements
• Report any personal health condition that might compromise the cleanliness or quality of the medical marijuana that the employee might handle
• Report any fellow employee that is demonstrating any of the symptoms or conditions identified in the Personal Health, Hygiene, and Cleanliness handout

13. Employee: Packaging and Labeling Technician

Role:
Perform day-to-day packaging and labeling responsibilities under the direction of the Manager of Packaging and Labeling.

Responsibility: Packaging and labeling medical marijuana and medical marijuana products.

Duties:
• Set filling equipment up to allow for product introduction i.e., clean in place, sterilize, and product fill
• Enter strain, batch, package ID, weight increment and quantity information into purchase orders
• Material handling of packaging materials
• Enter material movement into inventory systems as appropriate
• Stage product and packaging supplies to meet daily production schedule
• Operate and troubleshoot equipment through manual controls – filling and packaging equipment including weight control
• Perform quality assurance protocols as designated
• Document and record production and quality information as necessary
• Work closely with maintenance to promote an environment of continuous improvement
• Perform a final verification before medical marijuana leaves the facility

14. Employee: Quality Control Technician

Role:
Perform day-to-day quality control responsibilities under the direction of the Manager of Quality Control.

Responsibility: Implement day-to-day quality assurance and quality control procedures

Duties:
• Oversee the proper handling, receiving, documentation, and storage of all medical cannabis and medical cannabis product components. Includes quarantine, analysis, and release of all product related components.
• Review, track, and archive all product related controlled documents. Keep hard and soft copies of all document flow
• Oversee calibration of production instrumentation
• Work with operating staff to establish procedures, standards, systems and procedures
• Act as a catalyst for change and improvement in performance and quality
• Identify and resolve problems during any points of product lifecycle. Investigate any product-related issues using the instruments
• Oversee production, productivity, quality, and customer-service standards
• Implement any necessary changes (procedural, mechanical, personnel, or otherwise) following investigation
• Train production (or other) employees on new or updated procedures
• Facilitate proactive solutions by collecting and analyzing quality data
• Communicate with external quality assurance officers during on-site inspections
• Facilitate planned procedure in case of product recall
• Maintain working knowledge of the computer system
• Contribute to team effort by accomplishing related results as needed
• Ensure that all manufactured medical cannabis infused products pass quality control testing for consistency and dosage and meet the appropriate standards of the Consumer Product Safety Division
• Undertake training by the Applicant as to the standards of acceptability for any raw plant matter, finished or unfinished cannabis concentrate used or produced at the processing facility
• Approve or reject any raw plant matter received by the processing facility
• Approve or reject any finished or unfinished cannabis concentrate that is produced on-site at the processing facility
• Approve or reject all solvents used in the production of cannabis concentrate on-site at the processing facility
• Accurate logs of all materials and products—accepted or rejected—must be kept at all times by all Quality Control Agents

Responsibility: Update Quality Assurance and Quality Control protocols

Duties:

• Develop and analyze statistical data and product specifications to determine standards and to establish quality and reliability expectancy of finished products.
• Provide technical and statistical expertise to teams.
• Formulate, document and maintain quality control standards and on-going quality control objectives.
• Coordinate objectives with production procedures in cooperation with other plant managers to maximize product reliability and minimize costs.
• Create, document and implement inspection criteria and procedures.
• Interpret quality control philosophy to key personnel within company.

15. Employee: Shipping & Receiving Personnel

Role:
Perform day-to-day shipping and receiving responsibilities under the direction of the Manager of Transportation.

Responsibility: Perform day-to-day shipping and receiving tasks

Duties:

• Maintain compliance with all applicable standard operating procedures, including those described in Section 11 Transportation and Section 20 Sanitation
• Prepare manifests and package medical marijuana and medical marijuana into shipping crates such that the orders are fulfilled for assigned deliveries
• Verify the manifests of all received deliveries
• Perform loading or unloading tasks
• Responsible for inventory of all materials used in department and finished goods
• Track schedule attainment, efficiency rates, and other production metrics and utilize this data to plot strategies for improvement

16. Employee: Delivery Personnel

Note: Delivery personnel may be contracted through third-party organizations. In these instances, the Manager of Transportation is still responsible for ensuring that delivery personnel abide by all mandatory requirements under the regulations.

Role:
Perform day-to-day delivery responsibilities under the direction of the Manager of Transportation.

Responsibility: Carry out safe and compliant delivery of medical marijuana products.

Duties:
• Act in accordance with all requirements listed in Section 11, Transportation
• Maintain a clean driving record
• Always operate in pairs, with at least one member of the pair remaining with the vehicle at all times that medical marijuana or medical marijuana products are on board
• Deliver medical marijuana or medical marijuana products in accordance with the schedule approved by the Director of Transportation
• Complete necessary deliveries to dispensaries throughout Pennsylvania while maintaining scheduled appointments
• Confirm order accuracy with customers and verify order is consistent with invoice
18. Employee: Sales Coordinator

Role:
Coordinate with medical marijuana organizations to process orders and manage accounts. Promote and market the Applicant’s products. Perform market research. Report to the Department of Operations.

Responsibility: Sales, marketing, and account management

Duties:

- Develop brand and marketing strategies to increase sales
- Produce competitor analyses; monitor competitor deals
- Determine other opportunities for increased revenue, based on competitor information
• Coordinate and manage sales and accounts with other medical marijuana organizations

• Contribute to marketing communications including branding, public relations, advertising, trade shows, and events.

• Travel to various locations throughout the State of Pennsylvania in order to promote the Applicant’s products and represent the Applicant
B. Please describe the employee qualifications of each principal and employee.

9. Operator/Employee: Director of Transportation Nickolas J Brait
   • Active in the Colorado cannabis industry since 2013 as an attorney, consultant, and entrepreneur
   • Worked with dozens of cannabis businesses
   • Assists Colorado licensees with supply chain management and logistics as a Strategic Account Manager for COWA Science Corporation
   • Responsible for overseeing the daily purchasing and associated logistics for COWA’s largest customers, including some of the largest in the State of Colorado

10. Operator/Employee: Director of Security Tom Shannon
    • Managed a group of nine Regional Managers at Alert Center in Denver, Colorado
    • Started Peak Security, which specialized in the sales, service, installation, and monitoring of Burglar, Fire and Camera Systems
    • Consultant at United Systems for five years, where he sold, and supervised the installation of Burglar, Fire and Camera Systems
    • Started MAXX Security Inc. in 2010, which he is currently building through the sale of Burglar, Fire and Camera Systems

11. Operator/Employee: Director of Quality Assurance
    All leadership team members must align with the Applicant’s mission and vision.
    Qualifications:
    • Extensive experience in Quality Assurance (QA) and Quality Control (QC), specifically including calibration and sanitation procedures
    • Preferred experience overseeing employees implementing QA and QC procedures
    • Working current knowledge of the Pennsylvania cannabis industry / laws
    • Technical capacity to establish, optimize, and oversee the implementation of procedures that assure quality and reliability standards, raw material standards, in-process product inspection standards, evaluation and stability standards, and more as required
    • Superior coordination and operations logistics abilities
    • Advanced degree in organic chemistry or related field

12. Operator/Employee: HR Manager
    Qualifications:
• Experience administering Human Resource programs and company policies, including successful navigation and resolution of complex issues with investigating employees
• Experience training as needed on various HR related topics
• Experience providing advice and counsel to management regarding employee concerns, policy interpretation and administration of employment laws
• Experience dealing with employee compliance concerns in highly regulated environments
• Experience with workforce planning, talent acquisition, employee retention, and on-boarding programs
• Demonstrated understanding of Human Resources and employment laws
• Demonstrated strong coaching and leadership skills
• Demonstrated ability under pressure, meeting deadlines and managing multiple projects simultaneously
• Bachelor’s degree in related field preferred
• 8 + years of HR experience
• Experience in a fast-paced environment

13. Operator/Employee: Manager of Cultivation

Qualifications:
• Experience with large-scale commercial cultivation
• Preferred experience with medical marijuana cultivation on a commercial scale
• Ideal candidates will have experience with Ebb & Flow, DWC and Aeroponics growing methods, including in-depth knowledge of PH; PPM and EC counts.
• Demonstrated capability to oversee employees and to ensure standard operating procedures are strictly followed
• Ability to self-manage
• Inventory management experience
• Demonstrated technical ability to maintain up-to-date compliance records, including the use of specialized software applications
• Preferred working current knowledge of the Pennsylvania cannabis industry/ laws

14. Operator/Employee: Manager of Processing and Extraction

Qualifications:
• Advanced degree in organic chemistry or related field
• Experience with large-scale commercial processing and extraction operations, as well as product formulations and related research and development
• Preferred experience with medical marijuana processing and extraction on a commercial scale
• Preferred experience with Eden extraction equipment and supercritical Co2 extraction processes
• Demonstrated capability to oversee employees and to ensure standard operating procedures are strictly followed
• Ability to self-manage
• Inventory management experience
• Demonstrated technical ability to maintain up-to-date compliance records, including the use of specialized software applications
• Preferred working current knowledge of the Pennsylvania cannabis industry/ laws

15. Operator/Employee: Manager of Packaging and Labeling
Qualifications:
• Significant knowledge of global standards and regulations related to Product Labeling
• Experience in packaging and labeling, with a preference for experience labeling within the pharmaceutical industry
• Demonstrated capability to oversee employees and to ensure standard operating procedures are strictly followed
• Demonstrated attention to detail
• BS/BA degree plus
• Preferred working current knowledge of the Pennsylvania cannabis industry/ laws

16. Operator/Employee: Manager of Transportation
Qualifications:
• Substantial experience with managing shipping, receiving, and delivery personnel, preferred at a business that has significant expertise in reducing losses and diversions by employees
• Demonstrated ability to estimate, advise on, and monitor transportation time and expenses
• Demonstrated ability to manage customer service relationships
• Experience recruiting, training, and motivating drivers
• Transportation experience in dispatch and/or operations supervision a plus
• Bachelor’s degree or equivalent experience
• Preferred working current knowledge of the Pennsylvania cannabis industry/ laws

17. Operator/Employee: Manager of Product Recalls

Typically, this role will be held by an employee with another role, likely within the Quality Assurance team. The Applicant’s goal is to minimize the necessity for product recalls through the development of quality products and consistent and reliable product formulations.

Qualifications:

• Preferred experience managing recalls in a pharmaceutical environment; at minimum, experience monitoring or participating in product recalls in a highly regulated environment
• Preferred medical background and ability to understand or evaluate the severity of adverse health events
• Monitor dispensary relationships and discuss adverse health events
• Attention to detail
• Preferred working current knowledge of the Pennsylvania cannabis industry/ laws

18. Employee: Grower/Processor Employee

Employees may hold multiple roles. Some may act part-time as a quality control technician, and part-time as a processor technician. Others may double as cultivation technician and delivery personnel. Regardless of the specific responsibilities of each of these roles, all employees who operate on-site at the Applicant’s facility should meet the following qualifications.

Qualifications:

• Age: State law requires that applicants be 21 years old and over
• Ability to meet physical requirements: Include standing, walking, bending, and lifting up to 50 pounds, carrying product totes, pushing carts, moving and making adjustments to process equipment.
• Ability to perform repetitive tasks for long periods of time (i.e., trimming plants, weighing product, and regular inventory)
• Attention to detail
• Effective communication skills
• Strong work ethic
• Willingness to learn and improve each operation
• Education: High School Diploma or G.E.D minimum
• Must be able to pass a criminal background check
• Preferred working current knowledge of the Pennsylvania cannabis industry/ laws
19. **Employee: Cultivation Technician**

In addition to Grower/Processor Employee requirements.

Qualifications:
- Preferred experience with indoor horticulture operation
- Demonstrated ability to strictly adhere to standard operating procedures
- Ability to perform repetitive tasks for long periods of time (i.e., trimming plants, potting, and regular inventory).
- Physical requirements include standing, bending and lifting up to 50 pounds, pushing carts and wheelbarrows, carrying flats and pots.
- Availability to work occasional weekends and holidays
- High School diploma/GED
- Working current knowledge of the Pennsylvania cannabis industry/ laws

20. **Employee: Processor Technician**

In addition to Grower/Processor Employee requirements.

Qualifications:
- Preferred BS in organic chemistry or related field
- Experience in product formulation, botanical extraction, supercritical Co2 processes, laboratory equipment, or other related technical fields
- Demonstrated ability to strictly adhere to standard operating procedures
- Demonstrated ability to troubleshoot equipment, manage calibration and preventative maintenance processes; which include documentation, calibration, maintaining spare parts inventory. This includes the utilization of test equipment (oscilloscope, various meters, function generator, power supply)
- Experience programming equipment and setup for manufacturing to ensure product specifications are met
- Professional experience using volatile solvents
- Demonstrated experience strictly adhering to safety and security procedures

21. **Employee: Packaging and Labeling Technician**

In addition to Grower/Processor Employee requirements.

Qualifications:
- Demonstrated ability to strictly adhere to standard operating procedures
- Attention to detail and ability to be reliable and consistent in results
• Ability to operate and troubleshoot equipment through manual controls – filling and packaging equipment including weight control
• Experience performing quality assurance protocols as designated

22. Employee: Quality Control Technician
In addition to Grower/Processor Employee requirements.
Qualifications:
• Demonstrated ability to strictly adhere to standard operating procedures
• Preferred BS in organic chemistry or similar field, or equivalent experience
• Preferred experience with the proper handling, receiving, documentation, and storage of products requiring pristine conditions, including the use of clean rooms, quarantine protocols, and sanitary handling standards
• Experience with inventory control procedures and laboratory notebooks

23. Employee: Shipping & Receiving Personnel
In addition to Grower/Processor Employee requirements.
Qualifications:
• Demonstrated ability to strictly adhere to standard operating procedures
• Attention to detail
• High school diploma or GED, Associate's degree in a technical field is preferred.

24. Employee: Delivery Personnel
In addition to Grower/Processor Employee requirements.
Qualifications:
• Demonstrated ability to strictly adhere to standard operating procedures
• Attention to detail
• Conscientious, loyal, and professional
• Clean driving record
• Ability to handle materials (lifting 50-55 lbs.)
• Experience with the maintenance of delivery vehicles

25. Employee: Security Guard
In addition to Grower/Processor Employee requirements.
Qualifications:
• Demonstrated ability to strictly adhere to standard operating procedures
• High school diploma or general education degree (GED); two years’ experience required, three or more years preferred
• Prior security guard, military, or law enforcement experience required
• Active licensure as a security guard in the Commonwealth of Pennsylvania
• Veterans will be given priority
• Experience in medical cannabis industry highly desirable, but not required.

26. Employee: Sales Coordinator

In addition to Grower/Processor Employee requirements.

Qualifications:
• Medical background preferred
• Extensive experience managing client accounts and increasing sales
• Demonstrated ability to contribute to brand and marketing strategies to increase sales
• Demonstrated execution of marketing communications including branding, public relations, advertising, trade shows, and events.
• Ability to travel to various locations throughout the State of Pennsylvania
• Ability to provide own vehicle
• Clean driving record and current driver’s license

C. Please describe the steps the applicant will take to assure that each principal and employee will meet the two-hour training requirement under the Act and regulations.

9. Operator/Employee: Director of Transportation

The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training.

Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record.

During hiring procedures, the Applicant will offer use of on-site resources (under escort) in order to complete the two-hour training, if needed.
Prior to any operator or employee working a shift on-site, his or her supervisor will verify that the operator/employee has completed the required two-hour training. Any operator/employee who seeks to come to work without first completing this training will be put on notice that coming to another scheduled shift without documented proof of training completion will be grounds for termination, unless the operator/employee requires reasonable accommodation. If the operator/employee does not have access to the appropriate technology, or some other obstacle has interfered, the CEO will seek to accommodate such a need.

10. Operator/Employee: Director of Security

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11. Operator/Employee: Director of Quality Assurance

The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record.

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12. Operator/Employee: HR Manager

The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record.

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13. Operator/Employee: Manager of Cultivation

The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record.

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15. Operator/Employee: Manager of Packaging and Labeling

The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training. Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record.

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16. Operator/Employee: Manager of Transportation

The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training.
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17. Operator/Employee: Manager of Product Recalls

The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training.

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18. Employee: Grower/Processor Employee

The Applicant will pay for any training fees and time associated with the two-hour training, will coordinate to arrange for a good time to complete the training, and will follow up with each individual to ensure they have completed the training. These follow-up conversations will include at least one question based on the content of the training.

If feasible, all initial hires will take the training together as part of the Applicant’s pre-opening training.

Training and subsequent verification will be documented as part of the Applicant’s records. If available, any form of confirmation from the program will be included in this record.
During hiring procedures, the Applicant will offer use of on-site resources (under escort) in order to complete the two-hour training, if needed.

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Guide to Worker Safety and Health in the Marijuana Industry

Marijuana Occupational Health and Safety Work Group

January 2017

colorado.gov/cdphe/marijuana-occupational-safety-health
About this guide

This guide is intended to help assist employers in the marijuana industry build occupational safety and health programs. While the foundation of this guide includes existing Colorado state and federal regulations, it is not a comprehensive guide to all of the regulations pertaining to occupational safety and health. It should be noted that this guide does not present any new occupational safety and health regulations for the marijuana industry.

Marijuana cultivators, extractors, labs and retailers are required to adhere to all regulations established by the Colorado Department of Revenue’s Marijuana Enforcement Division (MED) https://www.colorado.gov/pacific/enforcement/laws-constitution-statutes-and-regulations-marijuana-enforcement.

The marijuana industry in Colorado falls under federal OSHA jurisdiction and businesses must comply with OSHA regulations and recordkeeping requirements. In addition to OSHA regulations, marijuana businesses are required to comply with other state regulations including Colorado labor laws, Colorado workers’ compensation laws, Colorado hazardous waste laws, Colorado Pesticide Applicator’s Act, local fire codes, and other regulations that are specific to employment and labor as well as the production of retail and medical marijuana.
About the Colorado Marijuana Occupational Health and Safety Work Group

The Colorado Marijuana Occupational Health and Safety Work Group is a multidisciplinary group that was convened to draw on expertise and experiences of many professionals in the Colorado community. The committee included professionals with a variety of skill sets, including epidemiologists, medical doctors, industrial hygienists, safety professionals, and regulatory specialists, which resulted in a thorough review of the potential occupational safety and health issues in the industry. The larger committee had several subcommittees that contributed to the production of this document. As the committee continues to meet, it is the intention that this guide will continue to grow to add information on how the industry can continue to address safety and health issues.

We would like to thank the following people and their respective organizations for their participation in the Colorado Marijuana Occupational Health and Safety Work Group:

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Executive Summary

At the time of this writing, 28 states and the District of Columbia currently have laws legalizing marijuana in some form. While many studies have focused on health outcomes and public safety issues, little attention has been focused on occupational safety and health associated with this industry. Prior to its legalization, occupational safety and health hazards associated with producing illegal marijuana were documented in published literature and law enforcement reports. Washington was the first state to develop formal guidance for the industry, such as the Regulatory Guidance for Licensed I-502 Cannabis Operations (https://fortress.wa.gov/ga/apps/sbcc/File.ashx?cid=4655). Our workgroup sought to identify various types of occupational hazards encountered in this industry and build a document to assist the industry and its workforce in building effective safety and health programs for their businesses. Our team included professionals with a variety of skill sets, including epidemiologists, medical doctors, industrial hygienists, safety professionals, and regulatory specialists, which resulted in a thorough review of the potential occupational safety and health issues in the industry.

The State of Colorado Marijuana Enforcement Division’s (MED) Retail Marijuana Code, 1 CCR 212-1 and CCR 212-2, have specific regulations written for the marijuana industry in Colorado. This document is informational only and is not intended to replace or supplement regulations from Colorado’s MED Retail Marijuana Code or from the U.S. Occupational Safety and Health Administration (OSHA). The best practices in this document are suggestions and do not establish any new enforceable regulations by the State of Colorado. Furthermore, this guide is not intended to provide a comprehensive list of existing federal, state, and local regulations that may apply to the marijuana industry.

Purpose, scope, and users of the guide

The complicated nature of the hazards present in the marijuana industry highlights the need for careful attention to safety and health at all types of marijuana businesses. The purpose of this guide is to provide an overview of the safety and health hazards that may be present in the cultivation, processing and sale of marijuana. Not all hazards listed in this guide may be present at a given facility. Conversely, there may be additional hazards not listed within the scope of this guide that may be present at a given facility. This guide is intended to provide a starting point for the assessment and evaluation of occupational health hazards. This guide also provides abbreviated guidance and a list of resources to help employers in the marijuana industry develop an occupational health and program.

Guide objectives

The objectives of this guide are to:

- Assist in the recognition of occupational health hazards that might be present within the marijuana industry.
- Identify specific existing federal, state, and local safety and health related regulations that may apply to the marijuana industry.
- Provide initial recommendations for engineering, administrative and personal protective equipment controls that can be used to help eliminate or reduce hazards in the marijuana industry.
- Provide information and resources to assist employers in developing written workplace safety and health programs.
- Provide information to help develop marijuana worker safety training programs.

Guide roadmap

Part 1 of the guide begins with the initial steps that can be performed to establish a safety and health program within a facility. Given this initial background in Part 1, Part 2 provides more detail in two separate sections.

Section I
- Outlines the hazards for the industry by category (biological, chemical, and physical).
- For each hazard a general description is given followed by:
  - Information on the job role that might be specifically affected by the hazard
  - Considerations for a hazard assessment
  - Best practices for eliminating or managing the hazard
  - Federal, state, or local regulations that may apply to that hazard
  - Additional resources to assist in hazard recognition and management.

Section II
- Outlines broader safety and health programs that should be implemented within the industry and provides examples and tools to help develop these programs.
- The programs in Section II are broader programs (e.g. hazard communication and hearing conservation) in which, if needed, have a written plan component that is required for compliance.

The final appendix that is included in this guide includes a table of OSHA regulations that may be applicable to the marijuana industry.
# Table of Contents

## Executive Summary

<table>
<thead>
<tr>
<th>i - ii</th>
</tr>
</thead>
</table>

### Part 1: Background and Establishing a Safety and Health Program

<table>
<thead>
<tr>
<th>1.0 Terms and definitions</th>
<th>2 - 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0 Illness and injury notification and reporting</td>
<td>5</td>
</tr>
<tr>
<td>2.1 Notification of worker’s rights</td>
<td>5</td>
</tr>
<tr>
<td>2.2 Worker’s compensation in Colorado</td>
<td>5</td>
</tr>
<tr>
<td>2.3 OSHA injury and illness record keeping</td>
<td>5</td>
</tr>
<tr>
<td>3.0 Establishing a safety and health program</td>
<td>6 - 7</td>
</tr>
<tr>
<td>3.1 Management leadership</td>
<td>6</td>
</tr>
<tr>
<td>3.2 Worker Participation</td>
<td>6</td>
</tr>
<tr>
<td>3.3 Hazard identification and assessment</td>
<td>6</td>
</tr>
<tr>
<td>3.4 Hazard prevention and control</td>
<td>7</td>
</tr>
<tr>
<td>3.5 Education and training</td>
<td>7</td>
</tr>
<tr>
<td>3.6 Program evaluation and improvement</td>
<td>7</td>
</tr>
<tr>
<td>4.0 Hierarchy of controls</td>
<td>7 - 8</td>
</tr>
<tr>
<td>5.0 Overview of the marijuana industry workforce and potential hazards</td>
<td>8 - 9</td>
</tr>
</tbody>
</table>

### Part 2: Guide to Worker Safety and Health in the Marijuana Industry

<table>
<thead>
<tr>
<th>Section I: Hazards</th>
<th>12 - 62</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 Biological hazards</td>
<td>12 - 15</td>
</tr>
<tr>
<td>1.1.1 Mold</td>
<td>13 - 14</td>
</tr>
<tr>
<td>1.1.2 Sensitizers/allergens</td>
<td>14 - 15</td>
</tr>
<tr>
<td>1.2 Chemical Hazards</td>
<td>16 - 26</td>
</tr>
<tr>
<td>1.2.1 Carbon dioxide (CO2)</td>
<td>18 - 19</td>
</tr>
<tr>
<td>1.2.2 Carbon Monoxide (CO)</td>
<td>19 - 20</td>
</tr>
<tr>
<td>1.2.3 Indoor air quality (IAQ)</td>
<td>20 - 21</td>
</tr>
<tr>
<td>1.2.4 Pesticides</td>
<td>21 - 23</td>
</tr>
<tr>
<td>1.2.5 Disinfectants/cleaning chemicals</td>
<td>23 - 24</td>
</tr>
<tr>
<td>1.2.6 Nutrients and corrosive chemicals</td>
<td>24 - 26</td>
</tr>
<tr>
<td>1.3 Physical hazards</td>
<td>27 - 50</td>
</tr>
<tr>
<td>1.3.1 Flammable/combustible liquids</td>
<td>29 - 30</td>
</tr>
<tr>
<td>1.3.2 Compressed gas</td>
<td>30 - 31</td>
</tr>
<tr>
<td>1.3.3 Occupational injuries</td>
<td>31 - 33</td>
</tr>
<tr>
<td>1.3.4 Ergonomics</td>
<td>33 - 34</td>
</tr>
<tr>
<td>1.3.5 Workplace violence</td>
<td>34 - 35</td>
</tr>
<tr>
<td>1.3.6 Walking and working surfaces</td>
<td>36 - 37</td>
</tr>
<tr>
<td>1.3.7 Working at heights</td>
<td>37 - 38</td>
</tr>
<tr>
<td>1.3.8 Electrical</td>
<td>39 - 40</td>
</tr>
<tr>
<td>1.3.9 Noise</td>
<td>40 - 41</td>
</tr>
<tr>
<td>1.3.10 Emergencies</td>
<td>41 - 43</td>
</tr>
<tr>
<td>1.3.11 Powered industrial trucks (forklifts)</td>
<td>43 - 44</td>
</tr>
<tr>
<td>1.3.12 Lighting hazards</td>
<td>44 - 46</td>
</tr>
<tr>
<td>1.3.13 Machines and hand tools</td>
<td>46 - 47</td>
</tr>
<tr>
<td>1.3.14 Extraction equipment</td>
<td>47 - 48</td>
</tr>
<tr>
<td>1.3.15 Confined spaces</td>
<td>49 - 50</td>
</tr>
</tbody>
</table>
### Part 2: Guide to Worker Health and Protection in the Marijuana Industry

#### Section II: Safety and Health Program Plans

| II.1 Hazard communication plan | 51 |
| II.2 Hearing conservation plan | 52 - 53 |
| II.3 Personal protective equipment assessment | 54 - 56 |
| II.3.1 Personal protective equipment standards | 54 |
| II.3.2 Eye protection | 55 |
| II.3.3 Hand and skin protection | 55 |
| II.3.4 Hearing protection | 56 |
| II.4 Respiratory protection plan | 56 - 59 |
| II.4.1 Respirator selection | 57 |
| II.4.2 Medical clearance | 58 |
| II.4.3 Fit testing | 58 |
| II.4.4 Respirator proper use and storage | 58 - 59 |
| II.4.5 Voluntary respirator use | 59 |
| II.5 Lockout/tagout | 60 - 63 |
| II.5.1 Energy control procedures | 60 |
| II.5.2 Reviewing of procedures | 60 - 61 |
| II.5.3 Training | 61 |
| II.6 Fire protection policy plan | 61 - 62 |
| II.7 Emergency action plan | 62 - 63 |

**Works Cited**

**Appendix A - OSHA Standards**

A1 - A2
Part 1: Background and Establishing a Safety and Health Program
1.0 Terms and definitions

ACGIH®: American Conference of Governmental Industrial Hygienists. The ACGIH® is a professional association of industrial hygienists and practitioners of related professions dedicated to promoting safety and health within the workplace. The organization is a professional society, not a government agency.

AIHA: American Industrial Hygiene Association. AIHA is one of the largest international associations serving occupational and environmental safety and health professionals practicing industrial hygiene and is a resource for those in large corporations, small businesses and who work independently as consultants.

Administrative controls: Policies, operating procedures, training programs, safe work practices, maintenance campaigns and other actions taken to prevent or mitigate workplace hazards.

Cannabis: Cannabis and marijuana are commonly used interchangeably. This document will use the term “marijuana” as this is the term used in Colorado legislation.

CDC: Centers for Disease Control and Prevention. The CDC is one of the major operating components of the Department of Health and Human Services. The CDC houses the National Institute for Occupational Safety and Health (NIOSH) whose mission is to develop new knowledge in the field of occupational safety and health and to transfer that knowledge into practice.

Cleaners: Products that remove dirt through wiping, scrubbing or mopping including soaps, detergents, and solvents.

CO: Carbon monoxide which is a colorless, odorless, and highly toxic gas most commonly produced indoors by incomplete combustion of natural gas or propane appliances or equipment.

CO₂: Carbon dioxide which is a colorless, odorless gas that can displace oxygen at high concentrations and is used as a growth supplement in the marijuana industry.

Confined space: A space that is large enough for an employee to enter fully and perform assigned works; is not designed for continuous occupancy by the employee; and has limited or restricted means of entry or exit.

Disinfectants: Products that contain chemicals that destroy or inactivate microorganisms that cause infections. Commercial disinfectants must be registered with the Environmental Protection Agency.

EAP: Emergency Action Plan which is a workplace plan to make sure employees know what to do in case of emergency.

Ergonomics: The application of human biological sciences with engineering sciences to achieve optimum mutual adjustment of people and their work, the benefits measured in terms of human efficiency and well-being.

Engineering controls: Permanent features built into facilities or production processes to automatically eliminate or mitigate hazards. Primary engineering controls prevent hazards from ever occurring, and secondary engineering controls minimize damage after events occur.

EPA: Environmental Protection Agency. The EPA is responsible for the protection of public health and the environment by assuring compliance with federal environmental statutes and regulations.
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act. The FIFRA provides for federal regulation of pesticide distribution, sale and use. All pesticides distributed or sold in the United States must be registered (licensed) by the Environmental Protection Agency.

Flammable liquid: Any liquid having a flashpoint at or below 199.4°F (93°C). Flammable liquids are divided into four categories:

- **Category 1**: Liquids having flashpoints below 73.4°F (23°C) and having a boiling point at or below 95°F (35°C).
- **Category 2**: Liquids having flashpoints below 73.4°F (23°C) and having a boiling point above 95°F (35°C).
- **Category 3**: Liquids having flashpoints at or above 73.4°F (23°C) and at or below 140°F (60°C). When a Category 3 liquid with a flashpoint at or above 100°F (37.8°C) is heated for use to within 30°F (16.7°C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint below 100°F (37.8°C).
- **Category 4**: Liquids having flashpoints above 140°F (60°C) and at or below 199.4°F (93°C). When a Category 4 flammable liquid is heated for use to within 3°F (16.7°C) of its flashpoint, it shall be handled in accordance with the requirements for a Category 3 liquid with a flashpoint at or above 100°F (37.8°C).

Hypersensitivity diseases: Diseases characterized by allergic responses to chemicals or other substances, such as asthma, rhinitis, and hypersensitivity pneumonitis.

HVAC: Heating ventilation and air-conditioning system.

IAQ: Indoor air quality.

Industrial hemp: Amendment 64 to the Colorado Constitution defines industrial hemp as a plant of the genus cannabis and any part of that plant, whether growing or not, containing a Delta-9 tetrahydrocannabinol (THC) concentration of no more than 0.3 percent on a dry weight basis.

Job hazard analysis (JHA): A technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the relationship between the worker, the task, the tools and the work environment. After uncontrolled hazards are identified, this tool assists in outlining the steps to eliminate or reduce the hazards to an acceptable risk level.

NIOSH: National Institute for Occupational Safety and Health. NIOSH is a branch of the Centers for Disease Control and Prevention whose mission is to develop new knowledge in the field of occupational safety and health to transfer that knowledge into practice.

Occupational Health: Refers to the identification and control of the risks arising from physical, chemical, and other workplace hazards in order to establish and maintain a safe and healthy working environment.

OSHA: Occupational Safety and Health Administration. With the Occupational Safety and Health Act of 1970, Congress created the OSHA to assure safe and healthful working conditions for working men and women by setting and enforcing standards and by providing training, outreach, education and assistance.

PEL: Permissible exposure limit. The PEL is the maximum amount or concentration of a chemical that a worker may be exposed to under OSHA regulations. This is usually expressed as an eight-hour, time-weighted average (TWA).
Permit-required confined space: A confined space that has one or more of the following: contains or has the potential to contain a hazardous atmosphere; contains a material with the potential to engulf someone who enters the space; has an internal configuration that might cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section; and/or contains any other recognized serious safety or health hazards.

PIT: Powered industrial truck. Any mobile power-propelled truck used to carry, push, pull lift, stack or tier materials. Powered industrial trucks can be ridden or controlled by a walking operator.

PPE: Personal protective equipment. PPE refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer’s body from injury or infection.

REL: Recommended exposure limits. This is an occupational limit that has been recommended by the United States National Institute for Occupational Safety and Health as being protective of worker safety and health over a working lifetime. It is frequently expressed as a time weighted average (TWA) exposure for up to 10 hours/day during a 40-hour work week.

Sanitizer: A product that contains chemicals that reduce, but do not necessarily eliminate, microorganisms such as bacteria, viruses and mold from surfaces. Public health codes may require cleaning with the use of sanitizers in certain areas, like toilets and food preparation areas. As with disinfectants, some sanitizers will be registered with the EPA.

SDS: Safety data sheet, formerly known as Material Safety Data Sheets (MSDS).

Sensitizer: A chemical or substance that causes a substantial proportion of exposed people or animals to develop an allergic reaction after repeated exposure to the chemical.

Terpene: Any large group of volatile unsaturated hydrocarbons found in the essential oils of plants. Terpenes are fragrant oils that can give marijuana its aromatic diversity.

Tetrahydrocannabinol (THC): The chemical that is the main mind-altering ingredient of cannabis.

TLV: Threshold limit value.

Veg Room: Where cloned marijuana plants from the nursery are grown to maturity before being moved into the flower room.

Volatile Organic Compounds (VOCs): Are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term health effects. Concentrations of many VOCs are consistently higher indoors than outdoors. VOCs may be emitted while using solvents for extraction operations.

WHO: World Health Organization. The WHO is a global organization that is similar to the Centers for Disease Control and Prevention. The organization publishes occupational health guidelines that can be supplemented in safety programs. Guidelines from WHO are not enforceable.
2.0 Illness and injury notification and reporting

2.1 Notification of worker’s rights

Employers are obligated to provide employees with current information about workers’ rights and labor laws as they relate to safety and health issues. All entities covered by OSHA are required to display the “OSHA Job Safety and Health: It’s the Law” poster in the workplace. This poster must be displayed in a conspicuous place where workers can see it. Copies of the poster can be accessed at: https://www.osha.gov/Publications/poster.html. In addition, Colorado employers may be required to post certain labor law posters. These posters can be accessed at: https://www.colorado.gov/pacific/cdle/posters.

2.2 Workers’ compensation in Colorado

As a part of a safety program, employers with one or more full-time or part-time employees are required by Colorado law to provide workers’ compensation insurance coverage for their employees, except for some specific exclusions. Coverage may be purchased from any authorized insurance company. If an employer fails, neglects or refuses to obtain workers’ compensation insurance as required by law, the Director of the Division of Workers’ Compensation is authorized to impose fines, and/or issue a cease and desist order against the business to stop operations until insurance is obtained. A contractor who contracts out any work to a subcontractor is liable for coverage for all workers of the subcontractor unless the subcontractor has obtained workers’ compensation insurance coverage.

2.3 OSHA injury and illness recordkeeping and reporting

Employers with more than 10 employees are required to keep a record of serious work-related injuries and illnesses. Minor injuries requiring first aid only do not need to be recorded. These records must be maintained at the worksite for at least five years. Each February through April, employers must post a summary of the injuries and illnesses recorded for the previous year. Per OSHA standard 29 CFR 1904.39, all employers are required to notify OSHA when an employee is killed on the job or suffers a work-related hospitalization, amputation, or loss of an eye. A fatality must be reported within 8 hours. An in-patient hospitalization, amputation, or eye loss must be reported to OSHA within 24 hours. For more detailed information on recordkeeping and reporting requirements: https://www.osha.gov/recordkeeping.
3.0 Establishing a safety and health program

The framework for establishing a safety and health program has been adapted below from the OSHA framework described fully in https://www.osha.gov/shpmguidelines/SHPM_guidelines.pdf. The OSHA safety and health program framework is intended to provide employers, workers, and worker representatives with a sound, flexible method for addressing safety and health issues in diverse workplaces. It is intended for use in any workplace but will be particularly helpful in small and medium-sized workplaces. Many of the safety and health topics covered in other sections of this guide fit within the context of this safety and health program. A successful safety and health program should include the following elements within the framework: management leadership, worker participation, hazard identification and assessment, hazard prevention and control, education and training, and program evaluation and improvement. A sample program following the principles below can be found at https://www.osha.gov/SLTC/etools/safetyhealth/mod2_sample_sh_program.html

3.1 Management leadership

Management provides the leadership, vision, and resources needed to implement an effective safety and health program. This includes a written policy signed by top management describing the organization’s commitment to safety and health and pledging to establish and maintain a safety and health program. Management can also establish goals to measure progress toward improved safety and health and allocate resources for pursuing these goals. An example management policy statement is located here: http://osha.oregon.gov/OSHAPubs/pubform/sample-policy-statement.doc

3.2 Worker participation

A safety and health program is dependent on worker participation in order to succeed. Workplaces should establish a process for workers to report injuries, illnesses, close calls/near misses, and other safety and health concerns, and respond to reports promptly. Reporting processes may have an anonymous component to reduce any fear of reprisal. Employees should also be given the opportunity to participate in every step of program design and implementation. The following document provides guidance in establishing management commitment and employee involvement in safety and health programs: https://www.osha.gov/dte/grant_materials/fy08/sh-17815-08/02_pg_module_2.pdf

3.3 Hazard identification and assessment

A proactive, ongoing process to identify, assess, and mitigate hazards is a core element of any effective safety and health program. Failure to identify or recognize hazards is frequently one of the root causes of workplace injuries, illnesses, and incidents. This assessment process involves collecting information about workplace hazards and conducting inspections of the workplace in order to characterize hazards and determine effective controls.

Using tools such as a job hazard analysis (JHA) is one practical approach to identifying hazards and possible solutions to reduce or eliminate hazards. Examples and more information on developing a job hazard analysis can be found here https://www.osha.gov/Publications/osh3071.pdf.
3.4 Hazard prevention and control

Effective controls protect workers from workplace hazards; prevent injuries, illnesses, and incidents; minimize or eliminate safety and health risks; and help employers provide workers with safe and healthy working conditions. Controls are selected based on feasibility, effectiveness and permanence. Once controls are implemented, they should be evaluated to measure their efficacy and updated accordingly. This step might include a Hazard Communication Program, Hearing Conservation Program, Lockout/Tagout, or a PPE Assessment, all described in this guide in Section II.

3.5 Education and training

Workers who know about workplace hazards, and the measures in place to control them, can work safer and more productively. Workers need to be trained on the safety and health program and their role as it relates to that program. They should also know how to identify workplace hazards and be involved in the process of controlling those hazards.

3.6 Program evaluation and improvement

This step in the process helps establish a system of evaluating control measures for their continued effectiveness. Processes should be established to monitor program performance, verify program implementation, identify program deficiencies and opportunities for improvement, and take actions necessary to improve the program and overall safety and health performance.

4.0 Hierarchy of controls

A number of control options exist when exposures or safety hazards are identified in the various occupational environments present in the marijuana industry. A well-known structure, the hierarchy of controls, has been successfully used to prevent worker injuries and illnesses in multiple industries.
Elimination and substitution

Recognized as the most effective controls at reducing hazards, these include eliminating a hazard altogether from a specific process or substituting a less hazardous activity or chemical for a more hazardous one. These are most successfully implemented at the process design or development stage.

Engineering controls

An engineering control is any change in facilities, equipment, tools, or process that eliminates or reduces a hazard. Engineering controls are designed to remove a hazard at its source before it comes in contact with the worker. Examples of engineering controls include process controls, isolation, and ventilation. Process controls involve changing the way a job or process is performed to make the work less dangerous (for example, using an electric motor instead of a diesel motor to eliminate exhaust emissions). Isolation controls keep employees isolated or physically removed from the hazard (for example, restricting employees from areas where intensive UV is being used).

Administrative controls

Administrative controls are measures an employer can implement to reduce employee exposure to hazards by changing the way they work. Examples include employee breaks and worker rotation.

PPE

One might assume the use of personal protective equipment (PPE) to control identified hazards is a first step in protecting workers in the marijuana industry. However, within the hierarchy, PPE is actually the least effective method compared to elimination, substitution, or engineering controls and administrative controls. One reason PPE is the least effective control method is because it requires reliance on the worker to ensure it is used consistently and correctly. However, when hazards cannot be controlled through other means, PPE plays an important part in protecting workers.

Medical screening and surveillance

In some settings, medical surveillance may be another strategy to optimize employee health. Medical screening is only one component of a comprehensive medical surveillance program. The fundamental purpose of screening is early diagnosis and treatment of the individual and has a clinical focus. The fundamental purpose of surveillance is to detect and eliminate the underlying causes such as hazards or exposures of any discovered trends and thus has a prevention focus. Using both medical screening and surveillance techniques can assist with the early identification of potential health hazards.

5.0 Overview of the marijuana industry workforce and potential hazards

Upon multiple worksite observations and discussions with industry representatives, Table 5.1 summarizes job titles and associated types of potential hazards observed in the marijuana industry. Given the rapid evolution of this industry, the nature of businesses may continue to expand and consequently job titles, tasks, and hazards will also change. These roles should be considered throughout the program to ensure potential hazards are adequately recognized and reduced.
### Table 5.1: Common occupations and potential hazards in the marijuana industry

<table>
<thead>
<tr>
<th>Job</th>
<th>Duties</th>
<th>Potential hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultivator</td>
<td>Planting, transplanting, physically relocating plants, watering, nutrient mixing and feeding, mixing and applying pesticides, cleaning, harvesting plants, drying plants</td>
<td>Mold, sensitizers/allergens CO₂, CO, pesticides/fungicides, ergonomics, walking/working surfaces, lighting hazards, chemical exposures</td>
</tr>
<tr>
<td>Trimmer</td>
<td>Trimming, packaging, shipping, data entry, cleaning</td>
<td>Mold, sensitizers/allergens, CO₂, CO, pesticides, ergonomics, occupational injuries (cuts), chemical exposures, machinery</td>
</tr>
<tr>
<td>Extraction technician</td>
<td>Extracting marijuana concentrates</td>
<td>Machinery, IAQ, allergens, noise, ergonomics, chemical exposures, use of explosive/flammable chemicals such as butane</td>
</tr>
<tr>
<td>Edible producer, infused product, confectioner/artisan/chef</td>
<td>Cooking, baking, packaging, bottling, and labeling marijuana infused products</td>
<td>Occupational injuries (burns), noise, chemicals</td>
</tr>
<tr>
<td>Budtender</td>
<td>Sales representative who sells marijuana and marijuana products to customers</td>
<td>Sensitizers/allergens, ergonomics, workplace violence</td>
</tr>
<tr>
<td>Laboratory technician</td>
<td>Operates laboratory equipment to determine cannabinoid and contaminant concentrations</td>
<td>Solvents, ergonomics</td>
</tr>
<tr>
<td>Cultivation owner/operator</td>
<td>In addition to running the business, may oversee and be involved in the functions of the grow operation</td>
<td>Sensitizers/allergens, mold, CO₂, CO, pesticides/fungicides, high pressure machinery, IAQ, noise, chemicals, workplace violence</td>
</tr>
<tr>
<td>Administrative</td>
<td>Responsible for day-to-day operations of the business. May include marketing roles, financial roles, HR roles, retail store management</td>
<td>Ergonomics, workplace violence</td>
</tr>
<tr>
<td>Transportation</td>
<td>May transport product or money between growing and retail facilities</td>
<td>Occupational injuries, workplace violence</td>
</tr>
<tr>
<td>Maintenance (non-contracted)</td>
<td>Facilities maintenance, equipment maintenance, HVAC</td>
<td>Elevated heights, electrical hazards</td>
</tr>
</tbody>
</table>

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Guide to Worker Safety and Health in the Marijuana Industry: 2017
Part 2: Guide to Worker Safety and Health in the Marijuana Industry
Section I: Hazards

I.1 Biological hazards

Biological hazards can arise from directly working with plants. Biological agents can include bacteria and fungi that have the ability to adversely affect human health in a variety of ways, such as causing nasal congestion, throat irritation and other physical health effects. A summary of the potential biological hazards that may be encountered in the marijuana industry is presented in Table I.1.

Table I.1 Summary of Potential Biological Hazards

<table>
<thead>
<tr>
<th>Hazard type</th>
<th>Hazard</th>
<th>Exposure level and/or applicable standards or guidelines</th>
<th>Health effects/hazard</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological</td>
<td>Mold</td>
<td>WHO Guidelines for Indoor Air Quality: Dampness and Mould</td>
<td>Nasal congestion, throat irritation, coughing, wheezing, eye irritation, skin irritation</td>
<td>Good housekeeping (moisture and dampness control), engineering controls (local and general exhaust ventilation), PPE</td>
</tr>
<tr>
<td></td>
<td>Sensitizers/allergens (dermal)</td>
<td>Varies</td>
<td>Irritant contact dermatitis, Allergic contact dermatitis</td>
<td>Medical surveillance, good housekeeping, proper PPE</td>
</tr>
<tr>
<td></td>
<td>Sensitizers/allergens (respiratory)</td>
<td>Varies</td>
<td>Itchy, runny, or congested nose; sneezing; coughing; wheezing</td>
<td>Engineering controls, proper PPE</td>
</tr>
</tbody>
</table>
I.1.1 Mold

Marijuana production requires increased levels of humidity, which have been found to be as high as 70 percent. This increased humidity in the presence of organic material promotes the growth of mold. Previous studies of illegal indoor growing operations have reported elevated levels of airborne mold spores, especially during activities such as plant removal by law enforcement personnel. In this study, law enforcement personnel were exposed to levels of mold equivalent to a small to medium-sized mold remediation project. To date, there have not been similar studies of legal growing operations to determine the risk for mold exposure in the more controlled cultivation facility environments. Scientific reviews by the Institute of Medicine (IOM) and WHO have indicated strong associations of exposure to indoor dampness related agents such as mold with health issues including wheezing, coughing, increased asthma symptoms, shortness of breath, and respiratory infections. A trained industrial hygienist can perform air monitoring to determine spore levels within the work environment. Special considerations may be needed for susceptible or immunosuppressed individuals. More research is needed to characterize and reduce potential exposures to mold and powdery mildew, including adverse effects on workers’ respiratory and lung functions.

**Job roles affected:** Employees within the cultivation facility and trimming room.

**Hazard assessment:** The facility should determine if the hazard is present and what controls or PPE might be needed for employee protection. Hazard assessments are contained within the Personal Protection Equipment Standard (See Section II).

**Best practices:**

- Implement water intrusion and mold mitigation practices in areas within the facility that might be prone to floods or have conditions that include standing water. Moisture control is the key to mold control on surfaces and within building structures.
- Implement engineering controls and work practices to control or eliminate exposure to mold (for example, vacuuming rather than sweeping and ventilation).
- Conduct a PPE assessment to determine the need for respiratory protection, skin and eye protection, or protective clothing.
- In the absence of mold sampling data, consider respiratory protection for any dusty operations and for employees reporting even mild respiratory symptoms.
- Consider gloves for employees whose jobs require direct handling of plants.
- Ensure employees are trained in the proper use of PPE.
- If an employee develops moderate to severe respiratory symptoms, they should be medically evaluated and removed from the agent that caused the reaction.

---

State/ federal standards:

- None specific for mold. Refer to OSHA General Duty Clause- Section 5 (a)(1) of the Occupational Safety and Health Act (OSHA) 1970 - Employers are required to provide their employees with a place of employment free from recognizable hazards that are causing or likely to cause death or serious harm to employees. 

Resources for program development:

- WHO Guidelines for Indoor Air Quality: Dampness and Mould 
  http://www.who.int/indoorair/publications/7989289041683/en/
- EPA: Mold Remediation in Schools and Commercial Buildings Guide:  

I.1.2 Sensitizers/ allergens

Case reports in the medical literature have described episodes of allergic reactions, hypersensitivity and anaphylaxis to marijuana\(^3\),\(^4\). Skin contact through personal handling of plant material or occupational exposure has been associated with hives, itchy skin, and swollen or puffy eyes. As with most sensitizers, initial exposure results in a normal response, but over time, repeated exposures can lead to progressively strong and abnormal responses. All of the hierarchy of controls can be used to help eliminate or reduce the effects of sensitizers or allergens.

Job roles affected: Employees who have direct contact with the marijuana plants.

Hazard assessment: Jobs roles that include coming in direct contact with plants should be evaluated and a PPE assessment completed. Hazard assessments are contained within the Personal Protection Equipment Standard (See Section II).

Best practices:

- The most effective exposure controls is to eliminate the exposure but this approach may not work in all situations.
- Engineering controls such as local ventilation can assist in controlling airborne exposures to dusts or chemical mists or vapors.
- Exposure controls at the worker level include work scheduling, job rotation, and worker training.
- Determine if direct contact with plants can be controlled first by the above mentioned elimination, engineering, or administrative controls.


Part 2: Guide to Worker Safety and Health in the Marijuana Industry

- Conduct a PPE assessment to determine the need for respiratory protection, skin and eye protection or protective clothing.
- Consider gloves for employees whose jobs require direct handling of plants.
- If an employee develops a rash they should be medically evaluated and removed from the agent that caused the reaction.

State/ federal standards:

- None specific to sensitizers/ allergens. Refer to OSHA General Duty Clause - Section 5 (a)(1) of the Occupational Safety and Health Act (OSHA) 1970 - Employers are required to provide their employees with a place of employment free from recognizable hazards that are causing or likely to cause death or serious harm to employees.  
- OSHA PPE General Requirements:  

Resources for program development:

I.2 Chemical hazards

Chemical hazards pose a wide range of safety and health hazards. As discussed below, in order to ensure chemical safety in any workplace, information about the identities and hazards of the chemicals must be available and understandable to workers. A summary of some of the potential chemical hazards that may be encountered in the marijuana industry is presented in Table I.2.

Table I.2: Summary of Potential Chemical Hazards

<table>
<thead>
<tr>
<th>Hazard type</th>
<th>Hazard</th>
<th>Exposure level and/or applicable standards or guidelines</th>
<th>Health effects/ hazards</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical</td>
<td>Carbon dioxide (CO₂)</td>
<td>OSHA PEL 5,000 ppm TWA</td>
<td>Asphyxiation, burns</td>
<td>Engineering controls, administrative controls (alarms/sensors), PPE</td>
</tr>
<tr>
<td></td>
<td>Carbon monoxide (CO)</td>
<td>OSHA PEL 50 ppm TWA</td>
<td>CO poisoning</td>
<td>Engineering controls, administrative controls (alarms/sensors)</td>
</tr>
<tr>
<td></td>
<td>IAQ (Volatile organic compounds)</td>
<td>Varies depending on the VOC</td>
<td>Eye, nose and throat irritation, headaches, vomiting, dizziness, worsening asthma symptoms</td>
<td>Engineering controls (e.g., proper ventilation), administrative controls (e.g., proper handling and use), PPE</td>
</tr>
<tr>
<td>Hazard type</td>
<td>Hazard</td>
<td>Exposure level and/or applicable standards or guidelines</td>
<td>Health effects/ hazards</td>
<td>Controls</td>
</tr>
<tr>
<td>-------------</td>
<td>--------</td>
<td>----------------------------------------------------------</td>
<td>-------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>Pesticides</td>
<td>EPA Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) EPA Worker Protection Standard 40 CFR Part 170 OSHA Hazard Communication 29 CFR 1910.1200 Colorado Pesticide Applicators’ Act Title 35 Article 10 and its Associated Rules</td>
<td>Pesticide poisoning - effect varies depending on the nature of the pesticide; nervous system effects, skin or eye irritation, endocrine disruption, cancer</td>
<td>Engineering controls, administrative controls [e.g., standard operating procedures (SOPs)], PPE, Worker Protection Standards</td>
<td></td>
</tr>
<tr>
<td>Chemical</td>
<td>Disinfectants / cleaning chemicals</td>
<td>OSHA Hazard Communication 29 CFR 1910.1200. Disposal may be regulated under Resource Conservation and Recovery Act (RCRA)</td>
<td>Respiratory or skin irritation, burns, irritation of eyes, asthma, improper mixing of chemicals can cause severe lung damage</td>
<td>Engineering controls (ventilation), administrative controls (substitution), PPE</td>
</tr>
<tr>
<td>Nutrients-Corrosives</td>
<td>OSHA Hazard Communication 29 CFR 1910.1200 Disposal may be regulated under Resource Conservation and Recovery Act (RCRA)</td>
<td>Respiratory, skin or eye irritation, burns to the skin and/or eyes, asthma, improper mixing of chemicals can cause severe lung damage</td>
<td>Administrative controls (substitution), Engineering controls (ventilation), PPE</td>
<td></td>
</tr>
</tbody>
</table>
1.2.1 Carbon dioxide (CO₂)

Carbon dioxide (CO₂) is used in the marijuana industry to increase plant growth and to produce concentrates. In addition to the liquid gas form, solid carbon dioxide or dry ice can be used for extraction processes. Dry ice converts directly to carbon dioxide gas and can be hazardous to workers if not handled properly. In addition, CO₂ might be used in compressed gas form for enrichment. Compressed gases can present a physical hazard that is described in this guideline under “Compressed gas” and has additional safety regulations that must be adhered to.

In normal concentrations, CO₂ does not pose a health hazard. However, at high concentrations, CO₂ acts as a simple asphyxiant. A simple asphyxiant is a gas or vapor that displaces oxygen. Most commercial CO₂ systems are equipped with monitoring devices that will sound an alarm if an unsafe level of CO₂ is detected in an area. These systems must be properly maintained and calibrated. Additionally, it is beneficial to train employees on the health effects associated with carbon dioxide so they are able to recognize symptoms in themselves or co-workers. Symptoms include headache, dizziness, rapid breathing, increased heart rate that can lead to unconsciousness, and death.

Job roles affected: Employees within the cultivation facility.

Hazard assessment: The facility should determine if the hazard is present and if controls or PPE are needed for employee protection. Hazard assessments contained within the Personal Protection Equipment Standard (See Section II). Carbon dioxide has an OSHA permissible exposure limit (PEL) of 5,000 ppm TWA.

Best practices:

- Install CO₂ monitoring devices in areas where concentrations of CO₂ might be elevated.
- Implement engineering controls to maintain environmental concentrations below permissible exposure levels.
- Ensure CO₂ safety data sheet (SDS) is accessible to employees and part of a hazard communication plan.
- Use gloves (and safety glasses) when handling dry ice to avoid contact with skin or eyes.
- Do not use or store dry ice in confined areas, walk-in refrigerators, environmental chambers or rooms without ventilation. A leak in such an area could cause an oxygen-deficient atmosphere.

State/ federal standards:

- Carbon dioxide has an OSHA PEL of 5,000 ppm (9,000 mg/m³) TWA.
Resources for program development:


I.2.2 Carbon monoxide (CO)

Carbon monoxide (CO) is a colorless, odorless, toxic gas which interferes with the oxygen-carrying capacity of blood. At elevated concentrations, CO can overcome persons without warning. Many people die from CO poisoning, usually while using gasoline powered tools and generators in buildings or semi-enclosed spaces without adequate ventilation. Severe carbon monoxide poisoning can cause neurological damage, illness, coma and death. Sources of carbon monoxide exposure include furnaces, hot water heaters, portable generators/ generators in buildings; concrete cutting saws, compressors; fork lifts, power trowels, floor buffers, space heaters, welding, and gasoline powered pumps.

Jobs affected: Employees within the cultivation facility, employees in areas where generators may be running or indoor equipment is being used.

Hazard assessment: The facility should determine if the hazard is present and if ventilation or PPE is needed for employees. Potential sources of CO should be evaluated. Hazard assessments are contained within the Personal Protection Equipment Standard (See Section II).

Best practices:

- Consider using tools (including power washers) powered by electricity or compressed air, if available.
- Implement engineering controls to reduce environmental concentrations to permissible exposure levels. Install an effective ventilation system that will remove CO from work areas.
- Do not use generators or gasoline powered engines indoors.
- Make sure space heaters or stoves are in good working order to reduce CO buildup and are not used in enclosed spaces.
- Install CO monitors with audible alarms.
- Establish a preventative maintenance program for all natural gas, propane, and gasoline powered equipment.
- Educate workers about the sources and conditions that may result in CO poisoning as well as the symptoms and control of CO exposure.

State/ federal standards:

- Carbon monoxide has a PEL of 50 ppm (55mg/m³)
I.2.3 Indoor air quality (IAQ)

Workers may encounter ozone as a product of the chemical reaction of nitrogen oxides and volatile organic compounds (e.g., terpenes emitted from the marijuana plant) present inside a cultivation facility. Nitrogen oxides may enter the facility, depending on the location of air intake and proximity to major highways. Terpenes and nitric oxides are associated with eye, skin and mucous irritation. Ozone generators may also be found in facilities for odor control. Ozone can cause decreased lung function and/or exacerbate pre-existing health effects, especially in workers with asthma or other respiratory complications. More research is needed to characterize potential exposures to ozone, nitrogen oxides, and volatile organic compounds in marijuana cultivation operations.

Job roles affected: Employees working in indoor environments may be subject to IAQ issues at any time.

Hazard assessment: Ensure HVAC systems are adequate for the facility where they are located. Many IAQ problems result from poor ventilation (lack of outside air), problems controlling temperature, high or low humidity, recent remodeling, and other activities in or near a building that can affect the fresh air coming into the building. Sometimes, specific contaminants like dust from construction or renovation, mold, cleaning supplies, pesticides, or other chemicals may cause poor IAQ.

Best practices:

- Ensure HVAC systems are appropriately sized and working effectively.
- Provide appropriate ventilation where chemicals are used indoors.
- Respiratory protection should be used as appropriate (See Section II).
- Establish a process for IAQ complaints and how they will be addressed.

State/ federal standards

- There are no OSHA standards for IAQ. Specific chemicals used may have OSHA PELs that need to be monitored. https://www.osha.gov/dsg/annotated-pels/
- NIOSH has Recommended Exposure Levels (RELs): NIOSH Pocket Guide to Chemical Hazards https://www.cdc.gov/niosh/npg/
- Consensus Standards: ACGIH TLVs.
I.2.4 Pesticides

Marijuana cultivation facilities may have insecticides and fungicides used within the facility. Some pesticides, including pyrethrins and neem oil are non-persistent and have low volatility. However, these pesticides have been associated with dermal and respiratory toxicity for the workers who apply them. Workers applying pesticides without proper personal protective equipment may be placing themselves at risk. Applicators need to know the product, use the product according to the label and understand the product’s toxicity. Unlabeled or unknown products should never be used and would be a violation of Colorado State Law, under the Pesticide Applicators’ Act to do so. Depending on the pesticide used, requirements from 40 CFR Part 170 also known as the EPA’s Agricultural Worker Protection Standard or WPS may need to be implemented. When a pesticide product has labeling that refers to the WPS, WPS codes will be enforced.

The WPS requires that owners and employers on agricultural establishments:

- Provide protections to workers and handlers from potential pesticide exposure;
- Provide training on the safe use of pesticides;
- Provide training on how to avoid exposures to pesticides; and
- Are able to identify pesticides exposure symptoms and how to respond and manage exposures to pesticides if they occur.

The WPS is an extensive rule all agricultural establishments must comply. The Colorado Department of Agriculture can provide information specific to the WPS by contacting Mike Rigirozzi at 303-869-9059 or michael.rigirozzi@state.co.us.

The Colorado Department of Agriculture has adopted rules setting criteria for allowable pesticides for use in the cultivation of cannabis in Colorado. These rules became effective March 30, 2016. A list of pesticides allowed for use in cannabis production in accordance with the Colorado Pesticide Applicator Act can be accessed at https://www.colorado.gov/pacific/sites/default/files/atoms/files/Pesticides%20allowed%20for%20use%20in%20cannabis%20production%208-4-16.pdf.

In addition to reading and following labels for correct pesticide use, labels should also be followed for the proper disposal of pesticide containers.

**Job roles affected:** Employees within the cultivation facilities. If WPS is referenced on the pesticide label, the WPS standard covers pesticide handlers: those who mix, load, or apply agricultural pesticides; clean or repair pesticide application equipment; or assist with the application of pesticides. The WPS standard also covers agricultural workers: those who perform tasks related to growing and harvesting plants in greenhouses or nurseries.
Hazard assessment: Hazard assessment for pesticide use should involve the following:

- Reading the product label and determining the hazard class of the pesticide from the human hazard signal word that is found on the label (caution, warning, or danger);
- Confirming what precautions must be considered when using the products to protect workers, the public, and the environment. This includes a PPE assessment for workers and handlers;
- Determining whether the WPS provisions apply and any associated re-entry intervals, storage and disposal requirements.

Best practices:

- Service containers should be labeled with the name of the product, active ingredient, EPA registration number, and each and every human hazard signal word.
- Pesticides must be used pesticides in a manner consistent with their label.
- All pesticide containers should be dedicated to a single product type or intended pest use if the products are compatible (e.g. insecticides, fungicides, herbicides).
- Maintain safety data sheets (SDS) for each product in a hazard communication plan (Section II).
- Ensure on a routine basis that only pesticides permitted by the Colorado Department of Agriculture are used.
- Ensure waste management procedures are consistent with the pesticide label requirements, EPA requirements for pesticide disposal and Colorado’s Agricultural Chemicals and Groundwater Protection Program.
- Ensure programs are in compliance with EPA’s Agricultural Worker Protection Standard guidelines.
- Evaluate the use of administrative or engineering controls. If administrative or engineering controls cannot be effectively implemented, PPE needs should be assessed.

State/federal standards:

- EPA Requirements for Pesticide Disposal: [https://www.epa.gov/pesticide-worker-safety/requirements-pesticide-disposal](https://www.epa.gov/pesticide-worker-safety/requirements-pesticide-disposal)
Part 2: Guide to Worker Safety and Health in the Marijuana Industry

- Worker Protection Standard: [http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr170_main_02.tpl](http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40cfr170_main_02.tpl)
- More information about pesticide use in this industry, as well as an up to date list of allowable pesticides, is located here: [https://www.colorado.gov/pacific/agplants/pesticide-use-cannabis-production-information](https://www.colorado.gov/pacific/agplants/pesticide-use-cannabis-production-information)

Resources for program development:

- Colorado Department of Agriculture: Pesticide Use in Cannabis Production Information [https://www.colorado.gov/pacific/agplants/pesticide-use-cannabis-production-information](https://www.colorado.gov/pacific/agplants/pesticide-use-cannabis-production-information)

1.2.5 Disinfectants/ cleaning chemicals

Employers must provide safe working conditions for employees using cleaning chemicals. Even if store bought household disinfectants and cleaners are used employees should be warned of their potential hazards. EPA- registered antimicrobials fall under pesticide registration and must be used in a manner consistent with the product labeling. These chemicals should be a part of the facility hazard communication plan (Section II). When chemicals such as bleach are used routinely, they can be corrosive to surfaces and could affect employees using the products by causing respiratory and skin irritation. In addition, injuries with spills and splashes can occur when cleaning. There are a variety of cleaning and disinfectant chemicals on the market. The least hazardous cleaning chemical that best suits the purpose for which it will be used should be chosen. If sanitizing or disinfecting is necessary, the product purchased should be effective against the microorganisms being targeted. These products are primarily intended for use as hard surface disinfectants, they are not intended to be applied directly to crops to control pest problems. Use in a manner inconsistent with the labeling would be a violation of the Colorado Pesticide Applicators’ Act.

Job roles affected: Employees who are responsible for housekeeping and anyone using disinfectants or cleaning chemicals.

Hazard assessment: Hazard assessment for disinfectants and cleaners should involve selection of the least hazardous chemical, ensuring safe working conditions exist, such as adequate ventilation, for employees using cleaning chemicals, and PPE compatibility and accessibility is assessed. Hazard assessments are contained within the Personal Protection Equipment Standard (See Section II).
Best practices:

- Choose safer cleaning chemicals that meet the cleaning/disinfecting needs.
- Ensure Safety Data Sheets (SDS) are provided and cleaning chemicals are labeled to identify their contents and hazards per hazard communication standards.
- Warn employees not to mix cleaning products that contain bleach and ammonia.
- Ensure workers know which chemicals must be diluted and how to correctly dilute the cleaners they are using.
- Provide training on the use, storage, and emergency spill procedures for cleaning chemicals.
- Operate ventilation systems as needed during cleaning tasks to allow sufficient airflow and prevent buildup to hazardous vapors.
- Review PPE needed such as gloves and goggles.
- Provide areas where employees can wash up after using cleaning chemicals.
- Provide eyewash stations if corrosive cleaning chemicals are being handled.

State/federal standards:

- Resource Conservation and Recovery Act (RCRA) https://www.epa.gov/rcra

Resources for program development:


1.2.6 Nutrients and corrosive chemicals

Cultivation facilities may encounter corrosive chemicals in the mixing of nutrients used for plant growth. Corrosives are materials that can attack and chemically destroy exposed body tissues. Corrosives can also damage or even destroy metal. The stronger or more concentrated, the corrosive material is and the longer it touches the body, the worse injuries can be. Corrosive materials can severely irritate, or in some cases, burn the eyes. Skin can become badly burned or even blister on contact with corrosive chemicals. Respiratory hazards can also occur from breathing in corrosive vapors or particles that irritate or burn the inner lining of the nose, throat and lungs.

Most corrosives are either acids or bases. Common acids include hydrochloric acid, phosphoric acid, sulfuric acid, nitric acid, chromic acid, acetic acid and hydrofluoric acid. Common bases are ammonium hydroxide, potassium hydroxide, and sodium hydroxide. Chemicals used in both liquid and solid forms should be a part of a hazard communication plan (Section II) and should be stored away from incompatible materials.
Job roles affected: Employees in cultivation areas. Employees who mix plant nutrients.

Hazard Assessment: Hazard assessment for nutrients and chemicals used should involve selection of the least hazardous chemical. Ensure safe working conditions, such as adequate ventilation, for employees using corrosive chemicals, and assess PPE compatibility and accessibility. Hazard assessments are contained within the Personal Protection Equipment Standard (See Section II).

Best practices:

- Substitute with a less hazardous material where possible.
- Ensure safety data sheets (SDS) are provided, and nutrients and corrosive chemicals are labeled to identify their contents and hazards per hazard communication standards.
- Provide training on the use, storage, and emergency spill procedures for corrosives.
- Operate ventilation systems to assist in the removal of corrosive vapors, fumes, mists or airborne dusts from the workplace. Use corrosion-resistant construction in ventilation systems for corrosive materials.
- Inspect all incoming containers of corrosives to ensure they are undamaged and properly labeled before storing them.
- Store corrosives in the type of containers recommended by the manufacturer or supplier. Corrosives can destroy containers made of improper materials.
- Segregate acids from bases when storing corrosives. Segregate inorganic oxidizing acids (e.g. nitric acid) from organic acids (e.g acetic acid), flammables, and combustibles.
- Segregate acids from water reactive metals such as sodium, potassium, and magnesium.
- Store corrosives on lower shelves at least below eye level and in compatible secondary containers.
- Do not store corrosives on metal shelves.
- Review PPE needed such as gloves and goggles. Ensure PPE is compatible with the chemical(s) being handled.
- Ensure employees are trained on how to appropriately use PPE.
- Provide areas where employees can wash up after using chemicals.
- Provide eyewash stations in areas where corrosive chemicals are being handled.

State/federal Standards:

- Resource Conservation and Recovery Act (RCRA) https://www.epa.gov/rcra
Resources for program development:

- N.C. Department of Labor: A Guide to Working with Corrosive Substances
- NIOSH: Occupational Health Guidelines for Chemical Hazards.
  http://www.cdc.gov/niosh/docs/81-123/
- OSHA: Solutions: Acid and Caustic Solutions
1.3 Physical Hazards

Physical hazards include hazards that might exist within the workplace that can cause physical harm or injury. Many of the hazards listed below have different regulations and work practices that should be followed to ensure a safe work environment. A summary of the potential physical hazards that may be encountered in the marijuana industry is presented in Table I.3.

Table I.3: Summary of potential physical hazards

<table>
<thead>
<tr>
<th>Hazard type</th>
<th>Hazard</th>
<th>Exposure level and/or applicable standards or guidelines</th>
<th>Health effects/hazard</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical</td>
<td>Compressed gases</td>
<td>Compressed gases - 29 CFR 1910. 101</td>
<td>Explosion hazards, fire</td>
<td>Administrative controls (proper use and handling)</td>
</tr>
<tr>
<td></td>
<td>Occupational Injuries (sharp objects, hot/</td>
<td>OSHA General Duty Clause 5(a)(1)</td>
<td>Cuts, burns, infection</td>
<td>Engineering controls, administrative controls, PPE</td>
</tr>
<tr>
<td></td>
<td>cold surfaces)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ergonomics, body mechanics</td>
<td>OSHA General Duty Clause 5(a)(1)</td>
<td>Muscle, nerve, and tendon injury</td>
<td>Engineering controls, administrative Controls</td>
</tr>
<tr>
<td></td>
<td>Workplace violence</td>
<td>OSHA General Duty Clause 5(a)(1)</td>
<td>Injury, mental health effects</td>
<td>Engineering controls, administrative Controls</td>
</tr>
<tr>
<td></td>
<td>Walking working surfaces</td>
<td>OSHA Standard 1910 Subpart D</td>
<td>Slips, trips, and/or falls</td>
<td>Engineering controls, administrative controls</td>
</tr>
<tr>
<td></td>
<td>Working at heights</td>
<td>OSHA Standard 1910.24- 1910.29 Subpart F</td>
<td>Fall from heights</td>
<td>Engineering controls, administrative controls, PPE (fall protection)</td>
</tr>
<tr>
<td></td>
<td>Electrical</td>
<td>OSHA Standard 1910 Subpart S</td>
<td>Burns, shock, electrocution</td>
<td>Engineering controls, administrative controls, PPE</td>
</tr>
<tr>
<td></td>
<td>Noise</td>
<td>85 dBA (action level for 8 hr TWA/ OSHA Standard 1910.95 / 90 dBA TWA)</td>
<td>Temporary or permanent hearing loss</td>
<td>Engineering controls, administrative controls, PPE</td>
</tr>
<tr>
<td>Hazard type</td>
<td>Hazard</td>
<td>Exposure level and/or applicable standards or guidelines</td>
<td>Health effects/hazard</td>
<td>Controls</td>
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<tr>
<td></td>
<td>Powered industrial trucks (PITs)(forklifts)</td>
<td>OSHA standard 1910.178</td>
<td>Driving accidents, accidents involving heavy/awkward loads</td>
<td>Engineering controls, administrative controls</td>
</tr>
<tr>
<td></td>
<td>Lighting hazards</td>
<td>OSHA Standard 1910.1096</td>
<td>Eye and skin damage</td>
<td>Engineering controls, Administrative controls, PPE</td>
</tr>
<tr>
<td></td>
<td>Machines</td>
<td>OSHA Standard 1910.212</td>
<td>Burns, explosions, hand injury, entrapment</td>
<td>Engineering controls, administrative controls, PPE</td>
</tr>
<tr>
<td></td>
<td>Extraction equipment</td>
<td>Denver Fire Department Marijuana Extractions guideline</td>
<td>Burns, explosions, fire, injury</td>
<td>Engineering controls, administrative controls, PPE</td>
</tr>
<tr>
<td></td>
<td>Confined spaces</td>
<td>OSHA Standard 1910.146</td>
<td>Entrapment, asphyxiation, engulfment, injury</td>
<td>Engineering controls, administrative controls</td>
</tr>
</tbody>
</table>
I.3.1 Flammable/ Combustible Liquids

Flammable and combustible liquids are liquids that can burn. Flammable and combustible liquids are present in almost every workplace, including the marijuana industry. Fuels and products such as solvents, thinners, cleaners, adhesives, paints, waxes and polishes may be flammable or combustible liquids. They are classified, or grouped, as either flammable or combustible based on their flashpoints. In general, flammable liquids will ignite and burn easily at normal working temperatures (below 37.8°C (100°F)). Combustible liquids have the ability to burn at temperatures that are usually above working temperatures (above 37.8 °C (100 °F) and below 93.3°C (200°F)). Containers of Category 1 or 2 flammable liquids or Category 3 flammable liquids with a flashpoint below 100°F (37.8 °C) are required to be bonded and grounded. Bonding and grounding should always be used when dispensing flammable liquids as well.

Job roles affected: Processors and anyone who might handle or be around flammable or combustible liquids within a facility.

Hazard assessment: Hazard assessment for work involving flammable liquids should thoroughly address the issues of proper use and handling, fire safety, chemical toxicity, storage and spill response. This can be completed by conducting a chemical inventory and reviewing the SDS for each chemical that can help to determine the proper handling, use of the chemical and procedures to follow in the event of a spill or chemical release.

Best practices:

- Eliminate, substitute less flammable chemicals or reduce the quantities of flammable liquids being used if possible.
- Ensure safety data sheets (SDS) for flammable liquids are included in a hazard communication plan (Section II).
- Conduct a PPE assessment and ensure PPE is worn as indicated on the SDS (Section II).
- Understand that storage requirements for flammable liquids have quantity and compatibility requirements.
- Understand bonding and grounding requirements for transfer of flammable liquids.
- Work with flammable liquids in a chemical fume hood.
- Keep flammable liquid containers closed when not in use.
- Use only closed-loop type LPG extraction equipment.
- Limit quantities of flammable liquids to the amount necessary for the work in progress.
- Implement flammable gas monitoring through the use of a hand-held combustible gas meter/leak detector (for facilities engaged in extraction processes).
- Develop an emergency action plan (Section II) and fire protection plan (Section II) and know the locations of fire alarms, pull stations, fire extinguishers, safety showers, and other emergency equipment.
State/ federal standards:

- Denver: Denver Fire Department: Marijuana Extraction Guideline for Commercial/ Licensed Facilities.  
- Flammable liquids- 29 CFR 1910.106  
- Flammable liquids -29 CFR 1926.152  

Resources for program development:

- NFPA 30 FAQs [https://www.nfpa.org/Assets/files/AboutTheCodes/30/30_FAQs.pdf](https://www.nfpa.org/Assets/files/AboutTheCodes/30/30_FAQs.pdf)
- Safety Guidelines for n-Butane: [http://www.cdc.gov/niosh/docs/81-123/pdfs/0068.pdf](http://www.cdc.gov/niosh/docs/81-123/pdfs/0068.pdf)
- Transitioning to Safer Chemicals (OSHA):  
- OSHA flammable liquid training slides [https://www.osha.gov/dte/library/Flammables.pptx](https://www.osha.gov/dte/library/Flammables.pptx)

### 1.3.2 Compressed gas

Compressed gas in the marijuana industry can consist of gases used such as CO₂ for enrichment purposes or gasses used for extraction processes. Large quantities of compressed gas in facilities with improper training and inadequate procedures can pose a serious threat to employee safety. All compressed gases are hazardous because of the high pressures inside the cylinders. Most cylinders have safety-relief devices. These devices can prevent rupture of the cylinder if internal pressure builds up to levels exceeding design limits. However, gas can be released deliberately by opening the cylinder valve, or accidentally from a broken or leaking valve or from a safety device. There have been many cases in which cylinders have become uncontrolled rockets or pinwheels and have caused severe injury and damage. In addition, pressure can become dangerously high if a cylinder is exposed to fire or heat, including high storage temperatures.

As stated in the extraction equipment Section 1.3.14, the Denver Fire Department has issued a Marijuana Extraction Guideline for Commercial/ Licensed Facilities that provides further guidance on the applicable codes for extraction equipment and associated chemical materials including compressed gases. This Denver code requires that extraction equipment approval is required from the Denver Fire Department for use in the City and County of Denver. Marijuana cultivators outside of the City and County of Denver should consult their local jurisdiction regulations.

**Job roles affected:** Extraction technicians and anyone using or handling compressed gases.

**Hazard assessment:** A hazard assessment for work involving compressed gasses should thoroughly address the issues of proper use and handling, fire safety, chemical toxicity, storage and spill response.
Best practices:

- Substitute or find a less hazardous substitute if possible.
- Know and understand the properties, uses, and safety precautions of gases or gas mixtures being used.
- Ensure safety data sheets (SDS) are available for the gases at the facility.
- Ensure cylinders have one or more safety-relief devices.
- Ensure compressed gases are stored upright and immobilized by chains or other means to prevent them from being knocked over. When not in use, ensure cylinder caps are in place.

State/ federal standards:

- Denver Fire Department: Marijuana Extraction Guideline for Commercial/ Licensed Facilities
- Denver Fire Department: Compressed Gas Policy
- Compressed gases - 29 CFR 1910. 101

Resources for program development

- Montana Department of Labor and Industry - Compressed Gas General Safety
  http://www.wsmr.army.mil/PDF/compressedgassafety.PDF

I.3.3 Occupational injuries

Employees in any industry are susceptible to potential injury (work-related or not), which could be anything from slips, trips, or falls, to an auto accident or heart attack. Many minor injuries or health-related incidents that occur in the workplace can be treated immediately using first aid. In more severe cases, first aid, CPR, or the use of an Automated External Defibrillator (AED) can help reduce the long-term severity of an injury or incident by providing temporary treatment until professional help can be obtained. Some locations may be too far from immediate emergency services and need to have employees with first aid training.

To handle potential workplace injuries, employers must ensure medical personnel and adequate first aid supplies are available to workers. Procedures should be developed to ensure medical personnel are ready and available for advice and consultation on the overall employee safety and health condition in the workplace. In addition, suitable facilities for immediate emergency use should be provided if exposure to injurious or corrosive materials is possible. Facilities should also use a “universal precautions” approach to infection control to treat all human blood and certain body fluids as if they were known to be infectious for HIV, HBV and other bloodborne pathogens. This involves avoiding contact with bodily fluids by wearing non-porous articles such as gloves, goggles and face shields.
Job roles affected: Common exposures for cuts include job roles that involve the use of trimmers and scissors, opening packages, and using knives for cutting tape and labels as well as other tasks. Burns can occur in operations involving food production, kitchens or when using cleaning chemicals. There is also the possibility of burns while changing tubing on compressed gases or from improper use of canned air.

Hazard assessment: Employers should make an effort to obtain estimates of emergency medical system (EMS) response times for all permanent and temporary locations and for all times of the day and night at which they have workers on duty, and they should use that information when planning their first-aid program. When developing a workplace first-aid program, it may help to consult the local fire and rescue service or emergency medical professionals for response-time information and other program issues.

Best practices:

- Develop a written first-aid plan.
- Ensure the ready availability of medical personnel for advice and consultation on matters of occupational health.
- Ensure employees have been provided with clear instructions on how to report their injuries and how and where to seek emergency medical attention.
- Have a person or persons within the facility who are adequately trained to render first aid as needed.
- Employees should be aware of universal precautions should an event occur where they may be exposed to blood or bodily fluids in the workplace.
- Provide workplace first-aid kits that meet ANSI/ISEA Z308.1-2015 standards.
- Supply an automated external defibrillator (AED) at the workplace and provide training to employees on how to properly use the AED.
- If any workers are designated to perform first aid as a part of their job, they should be aware of the bloodborne pathogen risks and a bloodborne pathogen program should be developed.

State/federal standards:


Resources for program development:

- First Aid Kit Minimum Requirements Checklist: [https://www.dli.mn.gov/OSHA/PDF/fact_firstaid.pdf](https://www.dli.mn.gov/OSHA/PDF/fact_firstaid.pdf)
I.3.4 Ergonomics

Ergonomics is the study of how humans interact with manmade objects. The goal of ergonomics is to create an environment that is well-suited to a user's physical needs. It is an applied science concerned with designing and arranging things people use so the people and things interact most efficiently and safely. Employers are responsible for providing a safe and healthful workplace for their workers. In the workplace, the number and severity of musculoskeletal disorders resulting from physical overexertion and their associated costs can be substantially reduced by applying ergonomic principles.

**Job roles affected:** Job roles such as trimming marijuana leaves or manual cultivation activities have tasks that might present awkward postures, high hand forces, highly repetitive motions, repeated impacts, heavy, frequent or awkward lifting; or moderate-to-high hand-arm vibration may be at risk for cumulative trauma disorders (CTDs), repetitive stress injuries (RSIs) or musculoskeletal disorders (MSDs).

**Hazard assessment:** Employers are encouraged to conduct a worksite analysis to identify ergonomic hazards and conditions by tracking injury and illness records to identify patterns of trauma or strains associated with particular job tasks that may indicate the development of MSDs or CTDs. Once these job tasks are identified, a risk assessment can be performed to evaluate the risk for an MSD. Major risk factors that may lead to cumulative trauma disorders of the upper extremities (hands and arms) include:

- Forceful exertions.
- Repetitive and/or prolonged activities.
- Prolonged static postures.
- Awkward postures of the body, including twisting the wrists and other joints to perform tasks.
- Continued physical contact with hard work surfaces, for example, table surfaces or edges; and
- Inappropriate or inadequate hand tools.

**Best practices:**

- Define clear goals and objectives for the ergonomic process, discuss them with their workers, assign responsibilities to designated staff members, and communicate clearly with the workforce.
- Involve workers to encourage a participatory ergonomic approach, where workers are directly involved in worksite assessments, solution development and implementation.
- Rotate employees to other jobs that use different muscle-tendon groups.
- Hire adequate numbers of employees to compensate for staff absences.
- Encourage by example and schedule stretch, rest and movement breaks throughout the workday.
- Train line staff, supervisors and managers in proper ergonomic postures and techniques to ensure employees are aware of potential ergonomic problems.
- Provide workstations that encourage proper ergonomic postures.
Part 2: Guide to Worker Safety and Health in the Marijuana Industry

- Provide tools designed for the task, in a variety of sizes to fit the various sizes of employees.
- Encourage early reporting of musculoskeletal disorders (MSDs).
- Ensure anti-fatigue mats are in a place where employees stand for extended periods of time.
- Ensure adjustable tables and chairs to accommodate a variety of body types.

State/ federal standards:

- None specific for ergonomics. Refer to OSHA General Duty Clause- Section 5 (a)(1) of the Occupational Safety and Health Act (OSHA) 1970- Employers are required to provide their employees with a place of employment free from recognizable hazards that are causing or likely to cause death or serious harm to employees.

Resources for program development:

- Prevention of Musculoskeletal Disorders in the Workplace (OSHA) https://www.osha.gov/SLTC/ergonomics/
- NIOSH: A Primer Based on Workplace Evaluations of Musculoskeletal Disorders http://www.cdc.gov/niosh/docs/97-117/

I.3.5 Workplace violence

There may be a false sense of security or general lack of awareness regarding workplace violence in the marijuana industry. The most obvious opportunity for violence is in growing operations and retail stores, due to the presence of large quantities of cash and product, the possibility of disgruntled employees, angry terminated employees, and a high-stress environment. Other routine activities such as moving large quantities of product between stores, transporting product in personal vehicles and making trackable movements (times and routes) create opportunities for a violent offender to attempt robbery. Workplace violence can take many forms including verbal threats, threatening behaviors or physical assaults. Violence can be committed by strangers, customers or clients, co-workers, or by personal relations.

Security in the marijuana industry is highly regulated by the Colorado Marijuana Enforcement Division (MED) due to the potential for crime against businesses with large amounts of product and/or money on the premises. Specific regulations can be accessed at: https://www.colorado.gov/pacific/enforcement/laws-constitution-statutes-and-regulations-marijuana-enforcement. These regulations include the placement of alarms and video surveillance as well as specific requirements to maintain visitor logs in limited access areas and signage to indicate ingress and egress to limited access areas. However, that security should not interfere with employees’ ability to exit the building in the event of an emergency, or with responders’ ability to enter.
Job roles affected: According to OSHA, research has identified factors that may increase the risk of violence for some workers at certain worksites. Such job roles in the marijuana industry at increased risk of violence include retail roles, employees working alone or in isolated areas, employees transporting marijuana products and cash to retail facilities, and employees working late at night or in areas with high crime rates. However, security should be assessed for all roles within the industry.

Hazard assessment: Employers are encouraged to conduct an assessment of the workplace to find existing or potential hazard for workplace violence. By assessing worksites, employers can identify methods for reducing the likelihood of incidents occurring. This assessment can include analyzing and tracking records of violence at work, examining specific violence incidents carefully, surveying employees to gather their ideas and input, and periodic inspections of the worksite to identify risk factors that could contribute to injuries related to violence.

Best practices:

● Establish Colorado security minimum requirements as outlined in the Colorado MED rules.
● Implement a sign-in procedure for visitors per Colorado MED rules.
● Post applicable laws, such as those prohibiting assaults and stalking, in visible locations.
● Establish a zero-tolerance policy toward workplace violence. This policy should cover all workers, patients, clients, visitors, contractors, and anyone else who may come into contact with company personnel.
● Establish a clear policy for workplace violence, verbal and nonverbal threats and related actions. All personnel employed in the retail establishment should know the policy.
● Ensure no worker who reports or experiences workplace violence faces reprisals.
● Encourage workers to promptly report incidents and suggest ways to reduce or eliminate risks.

State/ federal standards:

● None specific for workplace violence. Refer to OSHA General Duty Clause - Section 5 (a)(1) of the Occupational Safety and Health Act (OSHA) 1970 - Employers are required to provide their employees with a place of employment free from recognizable hazards that are causing or likely to cause death or serious harm to employees.
● Colorado Marijuana Enforcement Division: Specific Security Requirements [Website Link]

Resources for program development:

● OSHA- Safety and Health Topics: Workplace Violence [Website Link]
● Example Workplace Security Plan: [Website Link]
● Workplace Violence Prevention Programs in Late-Night Retail Establishments [Website Link]
● Washington State Department of Labor and Industries. Workplace Violence: Awareness and Prevention for Employers and Employees. [Website Link]
I.3.6 Walking and working surfaces

Regardless of the industry someone works in, workers and visitors to facilities can all be prone to slip, trip, and fall hazards both indoors and outdoors. Some of the causes of slip, trip, and fall injuries include:

● Distracted walking (listening, playing, or talking on devices).
● Uneven floors.
● Poor housekeeping (spills, slippery floors).
● Wet floors due to watering practices, nutrient mixing, and cold water hash production.
● Weather (wet/icy conditions).
● Clutter or loose cords.
● Unsecured rugs and mats.

Job roles affected: All employees are prone to slip, trip and fall hazards. A facility hazard assessment should be conducted to identify potential slip, trip, and fall hazards in the workplace and these should be eliminated or modified to reduce the fall potential.

Hazard assessment: Both slips and trips result from some kind of unintended or unexpected change in the contact between the feet and the ground or walking surface. Good housekeeping, quality of walking surfaces (flooring), selection of proper footwear, and appropriate pace of walking are critical for preventing fall accidents.

Best practices:

● Ensure passageways, storerooms, and service rooms are kept clean and orderly in a sanitary condition.
● Maintain clean, dry floors as much as possible. Where wet processes are used, maintain drainage, and provide false floors, platforms, mats or other dry standing places.
● Keep floors and passageways free from protruding nails, splinters, holes or loose boards.
● Clearly mark permanent aisles and passageways.
● Mark floor elevation change, noticeably to indicate the possible trip hazard.
● Develop a snow and ice removal program to reduce falls outdoors in winter weather.
● If electrical cords are used on a regular basis, install outlets so cords do not cross walkways.
● Provide proper lighting in all areas indoors and outdoors to reduce shadows, dark areas, and glare so trip hazards or surface irregularities are clearly visible. Replace non-working light bulbs promptly.
● Encourage employees to wear slip-resistant footwear.
● Guard floor openings with a cover, a guardrail, or equivalent on all sides.
● Make sure skylight screens can withstand a load of at least 200 pounds.
● All elevated working platforms over 4 feet from the ground must be protected on all sides with a guardrail.
State/ federal standards:

- 29 CFR 1910 Subpart D- Walking Working Surfaces:
  https://www.osha.gov/SLTC/walkingworkingsurfaces/standards.html
  - 1910.23, Guarding floor and wall openings and holes
  - 1910.24, Fixed industrial stairs
  - 1910.30, Other working surfaces

Resources for program development:

- OSHA: Safety and Health Topics- Walking/Working Surfaces
  https://www.osha.gov/SLTC/walkingworkingsurfaces/index.html
- NIOSH Workplace Solutions: https://www.cdc.gov/niosh/docs/2013-100/pdfs/2013-100.pdf

I.3.7 Working at heights

Falls from portable ladders (step, straight, combination and extension) are one of the leading causes of occupational fatalities and injuries. There are a number of ways employers can protect workers from falls, including using conventional means such as guardrail systems, safety net systems and personal fall protection systems, adopting safe work practices and providing appropriate training. Whether conducting a hazard assessment or developing a comprehensive fall protection plan, thinking about fall hazards before the work begins will help the employer manage fall hazards and focus attention on prevention efforts. If personal fall protection systems are used, particular attention should be paid to identifying attachment points and ensuring employees know how to properly use and inspect the equipment.

Job roles affected: Employees who use ladders and scaffolds, including step stools/step ladders.

Hazard assessment: Determine which specific jobs, activities or areas expose employees to fall hazards. Determine if employees will be exposed to any of the following: unprotected sides and edges, leading edges, floor holes, portable ladders and stairways, working above dangerous equipment, working overhead, roof work, aerial lifts, and scaffolds.

Best practices:

- A standard railing or guard must be placed on every open-sided floor or platform that is four feet or more above adjacent floors or ground level. All open sides except where there is an entrance to a ramp, stairway, or fixed ladder must be guarded.
- When there is a break in elevation of 19 inches or more, and no ramp, runway, embankment or personnel hoist is available, provide a stairway or ladder at all worker points of access.
- When there is only one point of access between levels, keep it clear of obstacles to permit free passage by workers.
- Develop a ladder safety, maintenance, and inspection program to ensure ladders are inspected prior to use and employees are trained on proper ladder safety.
- Ensure employee read and follow all labels/markings on the ladder and only use them for their designed purpose.
• Keep ladders free of oil, grease or other slipping hazards.
• Avoid electrical hazards. Make sure employees know to look for overhead power lines before handling a ladder. Avoid using metal ladders near power lines or exposed energized electrical equipment.
• Make sure employees using ladders always maintain a three-point (two hands and a foot, or two feet and a hand) contact on the ladder when climbing.
• Use ladders only on stable and level surfaces unless they are secured to prevent accidental movement.
• Make sure aerial lifts and manlifts have inspection and maintenance programs that ensure their safe operation.
• Provide fall protection for accessing or working on rooftops and some overhead storage areas. Include fall protection for work conditions six feet or more above lower level. This includes unprotected side edges, leading edges and walking/working surfaces.

State/ federal standards:

• 29 CFR 1910 Subpart D- Walking Working Surfaces:
  https://www.osha.gov/SLTC/walkingworkingsurfaces/standards.html
  o 1910.25, Portable wood ladders
  o 1910.26, Portable metal ladders
  o 1910.27, Fixed ladders
  o 1910.28, Safety requirements for scaffolding
  o 1910.29, Manually propelled mobile ladder stands and scaffolds (towers)
  o 1910 Subpart F, Powered platforms, manlifts, and vehicle-mounted work platforms
  o 1910.66, Powered platforms for building maintenance

Resources for program development:

• OSHA Fact Sheet: OSHA’s Final Rule to Update, Align, and Provide Greater Flexibility in its General Industry Walking- Working Surfaces and Fall Protection Standards
  https://www.osha.gov/Publications/OSHA3903.pdf
• OSHA Stairways and Ladders: A Guide to OSHA Rules
  https://www.osha.gov/Publications/OSHA3124.pdf
• OSHA Quick Card: Portable Ladder Safety
  https://www.osha.gov/Publications/OSHA3124.pdf
• Scaffolding eTool: https://www.osha.gov/SLTC/etools/scaffolding/index.html
1.3.8 Electrical

The cultivation of marijuana is a very energy intensive process. Common electrical hazards include the use of temporary wiring (e.g., extension cords), missing breakers, blocked electrical panels, improperly wired units, electricity use in high humidity and watering areas, improper repairs, unguarded fans, overloaded circuits, inadequate wiring, lack of training and general electrical safety. National electric codes as well as local building and fire codes should be applied to assist to eliminate the need for temporary wiring in a cultivation facility. Ensuring that electrical equipment and their power cords are in good working condition will reduce the potential of electrical shock and injury.

The OSHA lockout/tagout standard establishes the employer’s responsibility to protect employees from hazardous energy sources on machines and equipment during service and maintenance. Information on developing a lockout/tagout program is located in Section II of this document.

Job roles affected: Employees who may be working with or around electrical sources.

Hazard assessment: A hazard assessment of the workplace should be completed to develop a current listing of potential hazard areas, activities, or processes associated with electrical systems. This analysis will provide a basis for defining work-specific hazards associated with electricity and create a plan for hazard mitigation and employee training.

Best practices:

- Develop an electrical safety program based on the needs of the facility. Consider the following elements:
  - Bonding and grounding.
  - Overcurrent protection.
  - Installation in wet locations.
  - Flexible cords and cables.
  - Distribution panels and rooms.
  - Electrical guarding.
  - Working on or near live parts.
- Use only equipment that is approved by a nationally recognized testing laboratory.
- Do not modify extension cords or use them incorrectly.
- Use factory-assembled extension cord sets and only extension cords that are the three-wire type.
- Use only extension cords, connection devices, and fittings equipped with strain relief.
- Do not use extension cords as a substitute for permanent wiring.
- Use ground-fault circuit interrupters (GFCIs) on all 120-volt, single-phase, 15- and 20-ampere receptacles, or have an assured equipment grounding conductor program (AEGCP) where electrical outlets are located in damp or potentially wet.
- Use double insulated tools and equipment, distinctively marked.
- Visually inspect all electrical equipment before use.
- Remove from service any defective equipment.
Part 2: Guide to Worker Safety and Health in the Marijuana Industry

- Remove from service any equipment with frayed cords, missing ground prongs, cracked tool casings and other deficiencies.
- Avoid standing in wet areas when using portable electrical power tools.
- Develop a written lockout/tagout program and ensure training is provided and an annual review is completed.

State/ federal standards:

- Control of Hazardous Energy- 29 CFR 1910.147

Resources for program development:

- OSHA Fact Sheet: Working Safely with Electricity:
- OSHA Nationally Recognized Testing Laboratory Program: Acceptable Test Standards
  https://www.osha.gov/dts/otpca/nrtl/list_standards.html
- NIOSH: Electrical Safety: http://www.cdc.gov/niosh/topics/electrical
- See Section II for lockout/tagout resources for program development.

1.3.9 Noise

OSHA estimates nearly 30 million workers every year are exposed to hazardous levels of noise. Exposure to hazardous levels of occupational noise can cause noise-induced hearing loss. Noise-induced hearing loss (NIHL) is a reduction in a person’s ability to hear sound due to exposure to hazardous levels of noise. This damage can be irreversible. Noise levels can be variable within the different areas of cultivation facilities. Specific tools or machines that are being used can contribute to high noise levels in the facility.

To protect workers from NIHL OSHA has set an action level of 85 decibels (dB). OSHA requires employers to institute a hearing conservation program when workers are exposed to noise levels at or above the action level of 85 dBA. An industrial hygienist or safety specialist can perform noise monitoring to determine noise levels within the work environment. Generally, if a job process or operation is occurring in an area where voices need to be raised from a normal conversations sound level, these areas may be above the action level of 85 dBA and warrant further investigation.

Job roles affected: Employees working with or around loud machinery such as around power tools, compressors, or wood chippers.
Hazard assessment: Monitor and document sound levels in areas where noises cause a worker to raise his or her voice above normal conversation levels to be heard. Personal monitoring with dosimeters can also assess noise levels encountered by employees.

Best practices:

- Eliminate the noise source if possible. Substitution of the loud equipment for quieter equipment if elimination cannot be achieved. Noise controls should minimize or eliminate sources of noise; prevent the propagation, amplification, and reverberation of noise.
- Maintain tools and equipment routinely (such as lubricate gears)
- Reduce vibration where possible.
- Isolate the noise source in an insulated room or enclosure.
- Place a barrier between the noise source and the employee.
- Control exposure by changing work schedules to reduce the amount of time any one worker spends in the high noise area
- Use hearing protectors such as earplugs or earmuffs.
- Implement a hearing conservation program as required by OSHA if levels are at or above the action level of 85 dBA. (See Section II)

State/ federal standards:

- Occupational Noise Exposure- 29 CFR 1910.95

Resources for program development:

- OSHA’s program guide: https://www.osha.gov/SLTC/noisehearingconservation/
- See Section II for additional resources for program development.

I.3.10 Emergencies

Emergencies such as fires and natural disasters can be a hazard in any industry. The most important aspect of preparation is ensuring prevention programs are put in place. Facilities need to have an Emergency Action Plan (EAP) as required by OSHA. Emergency Action Plans (EAPs) should clearly establish employee roles and responsibilities, evacuation routes, and meeting locations during an emergency. Routine fire department inspections will help ensure compliance with fire extinguishing and sprinkling facility code requirements. It is essential to know where fire suppression systems are located and how to use fire extinguishers. Natural disasters such as tornados and potential workplace violence situations such as active shooter situations should also can be covered in an emergency action plan.

Job roles affected: All workers should participate and be aware of emergency action plans.

Hazard assessment: In most circumstances for fires, immediate evacuation is the best policy, especially if professional firefighting services are available to respond quickly. There may be situations in which employee firefighting is warranted to give other workers time to escape or to prevent danger to others by the spread of a fire. Shelter-in-place might be warranted in the case of a tornado.
Consider including active shooter scenarios in the EAP. See Section II for additional fire protection policy and Emergency Action Plan guidance.

Best practices:

- Determine the facility’s emergency hazards, including the building, geographic area, population, and potential natural or manmade emergency situations.
- Determine which emergency conditions may require shelter-in-place.
- Establish a clear chain of command, and designate a person who is authorized to order an evacuation or shutdown.
- Establish specific evacuation procedures, including routes and exits. Maps of evacuation routes should include locations of exits, assembly points, and equipment (such as fire extinguishers, first aid kits, spill kits, eyewash stations) that may be needed in an emergency.
- Exit routes should be:
  - Clearly marked and well lit.
  - Wide enough to accommodate the number of evacuating personnel.
  - Unobstructed and clear of debris at all times.
  - Unlikely to expose evacuating personnel to additional hazards.
- Emergency exit signs must be lit and clearly visible.
- Establish procedures for assisting visitors and employees to evacuate, consider those with disabilities or who do not speak English.
- Ensure emergency alarms are in place and are tested on a routine basis.
- Determine which, if any employees will remain after the evacuation alarm to shut down critical operations or perform other duties before evacuating.
- Establish a means to account for employees.
- Inspect and maintain fire suppression systems such as portable extinguishers and sprinklers per fire code regulations.

State/ federal standards:

Part 2: Guide to Worker Safety and Health in the Marijuana Industry


Resources for program development:


I.3.11 Powered industrial trucks (forklifts)

There are many types of powered industrial trucks (PITs). Each type presents different operating hazards. Workers can be injured:

- When lift trucks are inadvertently driven off loading docks.
- When lifts fall between docks and an unsecured trailer.
- When workers are struck by a lift truck.

Forklifts are primarily used to transport and move materials and come in many sizes and capacities. They can be powered by batteries, propane, gasoline or diesel fuel. Whenever forklifts are in use, operation programs must be established that outline the operation of the forklift as well as the training of the operator. In addition, the workplace where the forklift will be operated must be considered. In warehouse areas, such as might be found in marijuana cultivation facilities, pedestrian traffic must be considered when forklifts are in use. Forklift traffic and pedestrian traffic should be separated when possible. Forklift operation programs should also include inspection programs and additional safety measures that should be employed when powered industrial trucks are used in the workplace.

Job roles affected: Employees who are responsible for the operation of PITs (forklifts). Employees who might be working in areas where PITs (forklifts) are operated.

Hazard assessment: Determining the best way to protect workers from injury largely depends on the type of truck and the worksite where it is being used. Employers must ensure each powered industrial truck operator is competent to operate a powered industrial truck safely, as demonstrated by the successful completion of the training and evaluation specified in 29 CFR 1910.178(l)(1).

Best practices:

- Understand the type of powered industrial trucks present at the facility.
- Identify the major parts and accessories associated with the PITs and the potential hazard and solution associated with each part.
- Develop a program that includes a system for inspecting and maintaining PITs prior to their use.
- Develop good operating practices for traveling and maneuvering equipment, including protected travel paths so as to not interfere with foot traffic.
- Identify the hazards and recommended practices for each step in the load handling process.
Part 2: Guide to Worker Safety and Health in the Marijuana Industry

- Ensure only trained and competent operators are permitted to operate a powered industrial truck. All powered industrial truck operators must be trained and certified by their organizations.
- Never use a forklift to elevate a person on the forks to create an elevated work level.

State/federal standards:

- Powered Industrial Trucks 29 CFR 1910.178:

Resources for program development:

- OSHA: Safety and Health Topics: Powered Industrial Trucks- Forklifts
  https://www.osha.gov/SLTC/poweredindustrialtrucks/
- NIOSH: Preventing Injuries and Deaths of Workers who Operate or Work Near Forklifts
- Powered Industrial Trucks (Forklift) eTool https://www.osha.gov/SLTC/etools/pit/index.html

I.3.12 Lighting hazards

Metal halide lights, which are often used in veg rooms, contain an inner arc tube that is similar to a welder’s arc. This arc emits intense UV radiation along with visible light. Normally the outer glass bulb reduces the ultraviolet (UV) radiation to nominal levels, but, if the outer bulb is broken, UV levels can be significant enough to cause photokeratitis. Photokeratitis is a painful eye condition that occurs when your eye is exposed to invisible rays of energy called ultraviolet (UV) rays, either from the sun or from a man-made source. Symptoms, which include tearing, blurry vision, and the feeling of a foreign body in the eye, normally peak six to 12 hours after exposure. To prevent photokeratitis, broken metal halide bulbs should be immediately removed from service.

UV lamps can be useful germicidal tools. As with metal halide lights, exposure to UV radiation from these lamps can cause extreme discomfort and serious injury. The effect of UV radiation overexposure depends on UV intensity, wavelength, portion of the body exposed, and the sensitivity of the individual. Overexposure of the eyes may produce painful inflammation, a gritty sensation, and/or tears within three to 12 hours. Overexposure of the skin may produce reddening (sunburn) within one to eight hours. Certain medications can cause an individual to be more sensitive to UV light.

Fluorescent lamps may also be used in marijuana cultivation facilities. Health hazards with fluorescent bulbs are present when a fluorescent bulb breaks. The hazard is from metals such as lead, cadmium and, most importantly, mercury. Broken bulbs can release mercury vapors causing exposure to employees in the area of the broken lamp.

In addition to considering the health effects of lighting, there also must be a hazardous waste plan for disposing of spent or broken bulbs. Mercury containing lighting wastes such as fluorescent, high-pressure sodium, mercury vapor and mercury halide lamps are classified as “Universal Waste” and is covered under the Colorado Hazardous Waste Regulations and under the federal Resource Conservation and Recovery Act (RCRA).
Job roles affected: Employees who are working in areas where metal halide and/or other high-intensity lights are being used.

Hazard assessment: Operators of UV-generating equipment for which the radiation is not totally enclosed and exposure is possible should wear PPE to protect them from the long-term effects of UV radiation. These areas should be isolated from the general public entrance.

Best practices:

- Consider substituting metal halide lights with safer alternative lighting.
- Always operate metal halide and high-pressure sodium discharge lamps with the compatible ballast, rated fixture (open/closed, wattage), and socket.
- Provide and require the use of the appropriate PPE (glasses or goggles) for employees who work in intense lighting areas. Ensure that eye protection is rated for the UV wavelength that is being used.
- Ensure that safe electrical practices are used when changing out light bulbs. Electrical system work should only be performed by a qualified or certified person. Proper lockout-tagout procedures should be used when work is done on any system that may contain electrical energy.
- Appropriate fall protection measures should be taken when bulbs are changed while working at heights.
- Immediately remove broken lamps from service; develop a program to ensure used and broken bulbs are disposed of as hazardous waste.
- A protocol should be followed for the proper cleanup of broken bulbs. If a bulb is broken the room should be ventilated and central forced air heating/air conditioning should be shut off.
- Do not vacuum broken bulbs. Broken glass should be swept on to stiff paper or cardboard. Sticky tape, such as duct tape, can be used to pick up any remaining small glass fragments and powder. Used tape should be placed in a glass jar or plastic bag. All clean-up materials should be placed in a sealable container.
- Used and broken bulbs must be labeled as either “Waste Lamp”, “Used Lamp” or “Universal Waste Lamp”. If the waste is placed into an accumulation container, only the accumulation container needs to be labeled, not the individual lamps within it. The date when accumulation started should also be placed on the container. Broken lamps must be be individually packed in a closed packing container that is properly labeled and capable of preventing any releases of mercury vapor. Accumulated wastes on site should not be accumulated for more than one year. Universal wastes must be sent to a facility that is permitted to accepted it.
- Depending on the amounts of universal waste that is generated, this will determine how the facility disposes of the waste. Please refer to the Colorado Universal Waste Rule for more information.

State/ federal standards:

- None specific for lighting hazards. Refer to OSHA General Duty Clause - Section 5 (a)(1) of the Occupational Safety and Health Act (OSHA) 1970 - Employers are required to provide their employees with a place of employment free from recognizable hazards that are causing or likely to cause death or serious harm to employees.
Part 2: Guide to Worker Safety and Health in the Marijuana Industry

- Colorado Universal Waste rule Part 273
- EPA Universal Waste Program Overview https://www.epa.gov/hw/universal-waste

Resources for program development:

- Washington State Department of Labor and Industries: Hazard Alert
- OSHA’s Quick Card for avoiding mercury exposure from fluorescent bulbs:
  https://www.osha.gov/Publications/osha3536.pdf
- EPA CFL Clean-up Guide https://www.epa.gov/cfl/cleaning-broken-cfl

I.3.13 Machines and hand tools

In addition to high-pressure machinery for extractions, grinders, trimming machines or wood chippers might be used at marijuana cultivation facilities. For all machinery, it is key that preventative maintenance programs are put into place to ensure safe operation. In addition, a lockout/tagout program may be needed to ensure hazardous energy is isolated prior to machine maintenance (Section II). Employees who use hand and power tools and are exposed to the hazards of falling, flying, abrasive and splashing objects, or to harmful dusts, fumes, mists, vapors, or gases must be provided with the appropriate PPE.

Job roles affected: Employees who operate machines.

Hazard assessment: Assess machines for motion hazards such as pinch points or exposed rotating parts and actions such as cutting, punching, shearing or bending. Assess machine safeguards to ensure they meet the minimum OSHA requirements. Safeguards should prevent workers’ hands, arms and other body parts from making contact with dangerous moving parts or areas of high heat. A machine-guarding checklist can be used to assist with assessment.

Best practices:

- Assess machine hazards and ensure engineering controls are in place to protect against employee injuries.
- Consider a lockout/ tagout procedure if a machine needs additional de-energization steps.
- Machines such as grinders or others designed for a fixed location should be securely anchored to prevent the machine from “walking” or moving.
- Ensure employees using any type of machine are trained in their use.
- Ensure employees are trained in the proper use of all tools. Workers should be able to recognize the hazards associated with the different types of tools and the safety precautions necessary.
State/federal standards:

- Machinery and Machine Guarding - General requirements for all machines 29 CFR 1910.212

Resources for program development:

- OSHA Machine Guarding Checklist:
  https://www.osha.gov/Publications/Mach_SafeGuard/checklist.html
- Etool: Machine Guarding:
  https://www.osha.gov/SLTC/etools/machineguarding/additional_references.html
- OSHA: Checklist for Abrasive Wheel Equipment Grinders

I.3.14 Extraction equipment

Performing extractions is probably one of the most well known physical hazard in the marijuana industry. With the processes that are commonly used there is a large explosion and fire hazard when extracting oils from the marijuana plant. In response to this known hazard, the Denver Fire Department has developed extraction guidelines for commercial/licensed facilities that clarify the code requirements of the 2016 Denver Fire Code (2015 International Fire Code with Denver Amendments) Chapter 39. Local municipalities fire codes should also be consulted if the marijuana facility is outside the Denver Metro Area. However, the Denver Fire Codes to provide a framework for extraction safety and provide detailed construction and equipment standards that can assist in developing a safe extraction practice.

High heat and pressure may be combined to make products like rosin. High-pressure machinery poses a hazard both from the pressing and high pressure build-up to extract oils and from explosion hazards and burns. CO₂ is commonly used for extractions and is covered under its own section in this document. Extraction using butane is the most cost effective yet the most dangerous method of extraction used. Open releases of butane to the atmosphere during extractions is prohibited by Denver Fire Code. Extraction equipment that use hazardous materials (i.e. flammable/combustible liquids, Carbon Dioxide (CO₂), liquefied petroleum gases (i.e. butane)) are required to be listed or approved per the Denver Fire Code. Only closed-loop type liquefied petroleum gas extraction equipment is permitted. This equipment must further be approved by the Denver Fire Department before use.

Distillation or evaporative extraction/refinement processes may also be used in the extraction process. As with other electrified equipment, equipment used in these processes should be listed by a Nationally Recognized Testing Laboratory (NRTL) for their intended use and are required to be operated within the manufacturer’s guidelines.

Job roles affected: Employees involved in extraction processes.

Hazard assessment: If extraction processes are going to be utilized, local fire codes must be consulted. The 2016 Denver Fire Codes detail equipment and facility construction that needs to be put into place prior to performing extractions. Hazard assessments similar to what has been done for chemicals, gasses, flammable/combustible liquids should be followed. PPE assessments for employees should be performed. (Section II).
Best Practices:

- Ensure extraction equipment meets the regulations put forth in the Denver Fire Department’s Marijuana Extraction Guideline (see full regulation link below):
  - Extraction equipment must be listed or approved per Denver Fire Code Section 2703.2.3
  - If extraction equipment uses electrical components, a National Recognized Testing Laboratory (NRTL) listing is required in addition to an engineering report certifying the electrical components are compliant with appropriate electrical standards.
  - Vacuum Ovens should not be used to process volatile gasses unless the vacuum oven is rated to process these vapors. Vacuum ovens should be listed by an NRTL.
  - Refrigerated storage or processing of flammable liquids, including oil-laden with flammable liquids must only use refrigerators/ freezers rated to store flammable liquids.
  - Extraction rooms should be located in a room dedicated to the extraction process and meet stated fire code regulations including required suppression, gas detection, and ventilation systems.

- Establish a fire protection policy plan (Section II).

- Ensure that only trained employees are performing extraction processes and that they are trained on electrical safety, compressed gas, and fire protection standards.

- Assess the need for PPE that might be needed during the extraction process (Section II).

State/federal standards:


Resources for program development:

I.3.15 Confined spaces

Confined spaces are work areas that are large enough for an employee to enter, have limited means of entry or exit, and are not designed for continuous occupancy. These spaces can present physical and atmospheric hazards that can be prevented if addressed prior to entering the space to perform work. By this definition, water storage tanks used in many grow operations are confined spaces. People working in confined spaces can face life-threatening hazards including toxic substances, electrocutions, explosions, and asphyxiation. In the marijuana industry, examples of confined spaces are water tanks, cold storage areas, and manholes.

OSHA uses the term "permit-required confined space" (permit space) to describe a confined space that has one or more of the following characteristics:

- Contains or has the potential to contain a hazardous atmosphere.
- Contains material that has the potential to engulf an entrant.
- Has walls that converge inward or floors that slope downward and taper into a smaller area which could trap or asphyxiate an entrant.
- Contains any other recognized safety or health hazard, such as unguarded machinery, exposed live wires, or heat stress.

One example of a permit-required confined space is a water storage tank that is entered in order to perform cleaning tasks using chemical cleaners.

Job roles affected: All employees must be aware of confined and permit required spaces. Special training is required for employees who are entering permit-required confined spaces.

Hazard assessment: Employers should inspect the workplace to determine if any confined spaces exist. If confined spaces exist within the facility, employees must be notified of the existence and location of and the danger posed by the permit spaces.

Best practices:

- Inspect the workplace to determine if any confined spaces exist.
- Post signs in accordance with the OSHA Confined Space Standard on all confined spaces within the workplace.
- Consider altering cleaning procedures to eliminate the need for employees to enter confined spaces, such as water storage tanks.
- Develop and implement a comprehensive confined permit spaces program if employees will be required to enter confined spaces.

State/federal standards:

- 29 CFR 1910.146: Confined Space Standard
Resources for program development:

- OSHA Safety and Health Topics: Confined Spaces: https://www.osha.gov/SLTC/confinedspaces/
- OSHA Confined Spaces Advisor: http://webapps.dol.gov/elaws/confined.htm
- OSHA Publication 3138: https://www.osha.gov/Publications/osha3138.html
Section II: Safety and Health Program Plans

II.1 Hazard communication plan

The Hazard Communication Standard requires employers to inform employees of hazards and identities of chemicals they are exposed to in the workplace, as well as protective measures that are available. All workplaces where employees are exposed to hazardous chemicals must have a written plan that describes how the hazard communication standard will be implemented in that facility.

The steps for implementing an effective hazard communication program are:

1. **Learn the standard and identify responsible staff**
   - Obtain a copy of the standard from OSHA, and designate an individual responsible for implementing this standard.

2. **Prepare and implement a written hazard communication program**
   - Address how you will meet the requirements of the standard, and include a list of all hazardous chemicals in the workplace.

3. **Ensure containers are labeled**
   - Manufacturers of hazardous chemicals are required to label, tag or mark the chemical with the identity of the material and appropriate hazard warnings. If materials are transferred into other containers, employers may create their own workplace labels. They either can include all the required information on the label from the chemical manufacturer, or the product identifier and words, pictures and symbols, or a combination thereof, which in combination with other information immediately available to employees, provides specific information regarding the hazards of the chemicals.

4. **Maintain safety data sheets (SDS)**
   - Safety data sheets include information about hazardous chemicals, including identification, hazards, first-aid measures, and handling and storage precautions. Manufacturers are required to provide SDS. These sheets must be maintained by employers for all hazardous chemicals in the workplace and be readily available to employees.

5. **Inform and train employees**
   - Employees must be trained on hazardous chemicals in their work areas before their initial assignment, and whenever new hazards are introduced. They must also be aware that labeling and SDS provide information about chemicals hazards.

6. **Evaluate and reassess your program**
   - Hazard communication programs must remain current. The best way to do this is to periodically reassess the program to make sure it is meeting its objectives and includes all hazardous chemicals in the workplace.

References: OSHA Hazard Communication Program Fact Sheet:

Resources and examples for program development:

- https://www.osha.gov/Publications/osha3111.htm
- www.lni.wa.gov/safety/rules/chapter/800/helpfultools/ht9-cr.doc
- OSHA’s label requirements and sample:
II.2 Hearing conservation plan

To protect workers from noise induced hearing loss OSHA has set an action level of 85 decibels (dBA) as a time-weighted average (TWA). OSHA requires employers to institute a hearing conservation program when workers are exposed to noise levels at or above the action level of 85 dBA or, equivalently, a dose of 50 percent. TWA exposures exceeding the OSHA permissible exposure limit of 90 dBA require feasible engineering or administrative controls to be implemented. An industrial hygienist can perform noise monitoring to determine noise levels in a facility. If there are job processes or areas of an operation where employees must raise their voices for the person next to them to hear, these areas may be above the action level of 85 dBA and warrant further investigation. In the cultivation of marijuana, loud noises could be generated by hand tools, wood chippers, if any landscaping equipment is being used by employees, or compressors to name a few.

An effective hearing conservation program can prevent hearing loss, improve employee morale, promote a general feeling of well-being, increase the quality of production and reduce the incidence of stress-related disease.

A hearing conservation program includes the following elements:

1. **Monitoring program**
   A hearing conservation program requires employers to monitor noise exposure levels in a way that accurately identifies employees exposed to noise at or above 85 decibels (dB) averaged over eight working hours, or an eight-hour, time-weighted average (TWA). Employers must repeat monitoring whenever changes in production, process, or controls increase noise exposure. These changes may mean more employees need to be included in the program or their hearing protectors may no longer provide adequate protection.

2. **Hearing protection devices**
   Employers must provide hearing protection devices to all employees at or above the action level. Employers must provide hearing protectors to all workers exposed to eight-hour TWA noise levels of 85 dBA or above. This requirement ensures employees have access to protectors before they experience any hearing loss.

   **Employees must wear hearing protectors:**
   - For any period exceeding six months from the time they are first exposed to eight-hour TWA noise levels of 85 dB or above, until they receive their baseline audiograms if these tests are delayed due to mobile test van scheduling.
   - If they have incurred standard threshold shifts that demonstrate they are susceptible to noise.
   - If they are exposed to noise over the permissible exposure limit of 90 dB over an eight-hour TWA.

   Employers must provide employees with a selection of at least one variety of hearing plug and one variety of hearing muff. Employees should decide, with the help of a person trained to fit hearing protectors, which size and type protector is most suitable for the working environment. The protector selected should be comfortable to wear and offer sufficient protection to prevent hearing loss.

3. **Employee training and education**
   All employees at or above the action level must be given training on the effects of noise on hearing and how and why to use various types of hearing protection devices. Employers must train employees exposed to TWAs of 85 dB and above at least annually in the effects of noise, the purpose, advantages, and disadvantages of various types of hearing protectors, the
selection, fit, and care of protectors, and the purpose and procedures of audiometric testing. The training program may be structured in any format, with different portions conducted by different individuals and at different times, as long as the required topics are covered.

4. Audiometric evaluations
Employees that are a part of a hearing conservation program should be tested both at their hire and annually to determine if they have experienced any hearing loss. Audiometric tests must be performed by a licensed professional. Within six months of an employee’s first exposure at or above the action level, the employer shall establish a valid baseline audiogram against which subsequent audiograms can be compared. Audiograms should continue at least annually after obtaining the baseline audiogram for each employee exposed at or above an eight-hour, time-weighted average of 85 decibels.

5. Recordkeeping
Employers must retain data on exposure measurements and audiometric test results. Employers must keep noise exposure measurement records for two years and maintain records of audiometric test results for the duration of the affected employee’s employment. Audiometric test records must include the employee’s name and job classification, date, examiner’s name, date of the last acoustic or exhaustive calibration, measurements of the background sound pressure levels in audiometric test rooms, and the employee’s most recent noise exposure measurement.

Reference: OSHA Hearing Conservation Booklet:
https://www.osha.gov/Publications/OSHA3074/osha3074.html

Resources for additional program development:

- OSHA’s Occupational Noise Exposure: https://www.osha.gov/SLTC/noisehearingconservation/
II.3 Personal protective equipment assessment

The hazard assessment prescribed in the PPE standard is critical in identifying the potential physical hazards (e.g., noise, ultraviolet light), chemical hazards (e.g., pesticides, extraction chemicals), biological hazards (e.g., mold), and safety hazards (e.g., electrical/energized equipment, sharp objects such as trim scissors) that may be present in marijuana cultivation, processing or retail facilities. If a process or work practice changes, the employer should re-evaluate PPE needs to determine if the existing PPE program remains suitable and protective for the employees.

The PPE assessment involves the following steps:

1. **Assess the workplace for hazards.**
   Determine if hazards are present that necessitate the use of PPE. When the hazard assessment is complete, a written certification is required that documents information such as the workplace evaluated, individual who conducted the assessment, and date of assessment.

2. **Implement engineering controls and administrative controls (work practices) to control or eliminate these hazards to the extent feasible.**
   Engineering controls involve changing the machine or work environment to prevent employee exposure to a hazard. Administrative controls remove employees from the exposure by changing how they do their jobs.

3. **Select appropriate PPE to protect employees from hazards that cannot be eliminated or controlled through engineering controls and work practices.**
   Employers should use the information gained from the assessment to determine the appropriate PPE that may reduce or eliminate the potential for injury or illness.

4. **Inform your employees why the PPE is necessary and when it must be worn.**
   - Train your employees how to use and care for the selected PPE and how to recognize PPE deterioration and failure.
   - Require your employees to wear the selected PPE in the workplace.

II.3.1 Personal protective equipment standard

According to the PPE standard, employers are required to train each employee whom they provide PPE to conduct their work activities. The following information must be included in this training:

- What PPE is required.
- When to use PPE.
- How to properly use the assigned PPE, including how to put on, take off, and adjust it.
- The PPE’s limitations.
- How to properly care for, maintain, clean, and dispose of the PPE.

All employees must demonstrate an understanding of the above factors. If an employee appears unsure of one or more of these aspects, the employee should be re-trained. Documentation of the training provided to the workers is required.
II.3.2 Eye protection

Activities related to growing and processing marijuana may present a number of hazards that require the use of eye protection. Safety glasses or goggles should be used as PPE to protect against the possibility of eye injuries due to liquid chemical splashes, aerosolized nuisance dust or flying debris, or ultraviolet light exposures. Specific work processes and practices that should be evaluated in the industry and may necessitate the use of safety glasses or goggles for eye protection include:

- Pesticide mixing and application.
- Solvent use for extraction processes.
- Automated bud and leaf trimming that may generate aerosolized organic dust.
- Use of ultraviolet lamps in indoor cultivation operations.
- Trim machinery may throw items out at extreme speed.

Eye protection selected must meet the requirements of ANSI Z87.1-1989 if purchased after July 5, 1994. If an individual wears prescription glasses, side shields and protective lenses must meet these requirements as well. Goggles can be worn over glasses if they fit comfortably and do not disturb the alignment of the glasses.

II.3.3 Hand and skin protection

Because of the manual nature of many of the activities associated with growing and processing marijuana, protection of the hands is a requirement. A variety of gloves exist that can protect against dermal contact from compounds that could irritate, sensitize, puncture or cut the skin. Specific work processes and practices that may necessitate the use of gloves include:

- Pesticide mixing and application
- Solvent use for extraction processes
- Manual trimming of marijuana leaves and buds for protection against nicks or cuts from the hand shears
- Automated trimming of marijuana leaves and buds for protection against nicks or cuts from rotating metal equipment blades
- Cleaning processes

The material of choice for the glove depends on the nature of the hazard. Nitrile gloves can be a good selection for preventing irritation and dermatitis caused by contact with chemicals, solvents, and oils typically found and used in marijuana cultivation and processing facilities. The material also resists puncturing, abrasion, and snagging. Natural latex rubber gloves are not recommended because they can cause allergies to develop. In larger-scale industrial facilities, long-sleeved laboratory-style coats, coveralls, or aprons may be warranted. Cut-resistant gloves can prevent injuries to the hands and fingers.
II.3.4 Hearing protection

Workers in the industry may be exposed to high levels of noise for periods of time that could damage their hearing. Noise exposures may be particularly pertinent for larger scale marijuana processing operations in which industrial machinery is running. Automated equipment running conveyor belts, fans for freezers and ventilation exhaust systems, and machinery motors are all sources of noise that may necessitate hearing protection and require evaluation. Common types of hearing protection include earplugs and earmuffs. It is very important these properly fit the worker. Training is required to ensure workers know the effects of noise and how to properly select, fit and use the hearing protection device (see Section II.2).


Resources for additional program development

- PPE Assessment Certification Form: http://www.saif.com/_files/SafetyHealthGuides/PPE_Hazard_Assessment_Certification_Form.docx
- OSHA’s Employer Obligations and Payment for PPE: https://www.osha.gov/dte/outreach/intro_osha/7_employee_ppe.pdf

II.4 Respiratory protection plan

Workers in the marijuana industry have been observed to wear single-strap dust masks during certain dust-generating activities such as automated processing of marijuana. These may be useful in providing comfort from non-toxic nuisance dust, pollen, etc. However, they do not provide a level of respiratory protection compared to disposable filtering facepiece respirators approved by the National Institute for Occupational Safety and Health (NIOSH). If an exposure assessment determines a hazard exists for which respiratory protection is needed against airborne particles, a NIOSH-certified respirator (e.g., N-95) used in the context of a written respiratory protection program is recommended.

OSHA requires that in any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by the employer, the employer shall establish and implement a written respiratory protection program with worksite-specific procedures. The program must be updated as necessary to reflect those changes in workplace conditions that affect respirator use. The written respiratory protection program should include several important details, but first and foremost it must detail worksite-specific tasks and hazards for which respirator use is required. There must also be a designated program administrator who is suitably trained to administer the respiratory protection program. Examples of qualified program administrators include safety professionals, industrial hygienists, and occupational health nurses.
OSHA notes the following components may be necessary for a written program:

- Procedures for selecting respirators.
- Medical evaluations of employees required to use a respirator.
- Fit testing procedures.
- Procedures for proper use of respirators in emergency situations.
- Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding and/or maintaining respirators.
- Special requirements for atmosphere-supplying respirators.
- Training of employees in the respiratory hazards to which they are potentially exposed.
- Procedures for evaluating the effectiveness of the respiratory protection program.

The written program should be updated as necessary to reflect changes in the workplace that affect respirator use (e.g., new chemicals, different tasks or processes, etc.)

II.4.1 Respirator selection

- Identify and evaluate the hazard.

  The first step in determining the type of respirator to be used in a workplace is to identify and evaluate respiratory hazards present. This process should include an exposure estimate of the hazards, as well as identifying the contaminants chemical state and physical form. The exposure estimate is a critical first step in selecting a respirator because each type of respirator has an assigned protection factor (APF). The APF is a unitless number that indicates the factor by which the respirator will reduce exposure. For example, a half face respirator has an APF of 10, which means it will reduce an exposure of 1.0 mg/m$^3$ down to 0.1 mg/m$^3$, assuming the person wearing the respirator was fit to that make and model respirator and is wearing it properly. The OSHA APF document includes a table with APF for various respirators and can be used to determine what type of respirator is necessary for a given hazard.

- Select a respirator certified by the National Institute for Occupational Safety and Health (NIOSH).

  NIOSH tests respirators and determines how effective they are. Using a respirator that is not NIOSH-certified may result in respiratory protection that is not sufficient for the hazard to which the worker is exposed. Additionally, one must consider the situation the employer will be working in and if there are other hazards present in addition to respiratory hazards. For example, if employees are mixing liquid chemicals, they may also want eye protection which some respirators offer. It is also important to be aware that for half-face and full-face air-purifying respirators the cartridges or filters an employee attaches to the mask are dependent on the exposure. The filter or cartridge that can be used with a respirator typically must be the same brand as the manufacturer of the respirator itself and can filter for particulates, gases, and other specific chemicals. As such, it is again crucial the employer and employee understand the nature of the hazard so the appropriate filter or cartridge is selected for the respirator.
II.4.2 Medical clearance

- Provide a medical evaluation to determine the employee’s ability to use a respirator.

Before an employee wears a respirator, he or she must undergo a medical evaluation to determine his or her ability to wear a respirator. Medical clearance or evaluation is necessary because using a respirator may place a physiologic burden on employees. A medical evaluation can be completed using a medical questionnaire and/or an initial medical examination that obtains the same information as the medical questionnaire.

- Identify a physician or other licensed healthcare professional (PLHCP) to perform a medical evaluation.

- Obtain a written recommendation regarding the employee’s ability to use the respirator from the PLHCP.

II.4.3 Fit testing

- All employees using a negative or positive pressure tight-fitting facepiece respirator must pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT).

The fit test must be performed with the same make, model, style, and size of respirator the employee will use at work. It is important to note that fit tests should be performed for all respirators that require a seal, which includes N95 respirators that are often referred to as “dust masks.” Another important factor in fit testing is that tight-fitting facepiece respirators may not be used by employees who have facial hair that comes between the sealing surface of the facepiece and the face, or that interferes with valve function.

- Fit testing is required prior to initial use, whenever a different respirator facepiece is used, and at least annually thereafter.

An additional fit test is required whenever the employee reports, or the employer or PLHCP makes visual observations of, changes in the employee’s physical condition that could affect respirator fit (e.g. facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight).

II.4.4 Respirator proper use and storage

- Employees should be aware that tight fitting respirators should not be worn by employees who have facial hair or any condition that interferes with the face-to-face seal or valve function of a respirator.

- Employees should be aware of how to properly wear a respirator and its limitations.

If an employer is unsure of the proper procedures for putting on or taking off a respirator, there are many resources available, including the respirator manufacturer, which will often provide training and guidance for properly wearing the respirator. Once a respirator is on, it is also important to understand respirators have limitations in terms of the environments in which they can be worn, and how long they can be worn. One such limitation of respirators is that if there is not a proper seal between the respirator and the wearer’s face, the mask will not provide the protection necessary. This is why it is crucial that each time an employee wears a respirator, they perform the user seal checks for the respirator to ensure a good fit. User seal-check procedures should be part of the training and fit testing process. Another limitation is that the duration of time an employee can wear a disposable N95 respirator is different than the duration of time one can wear a half-face air filtering respirator with cartridges.
• Employees should understand the duration of respirator use.  

For all types of filtering respirators, the duration one can wear the respirator ultimately depends on the concentration to which the employee is exposed. Although some respirator cartridges have an end of service life indicator, which lets the wearer know when the cartridge is no longer working, most respirators and cartridges do not. This is why it is crucial that an exposure estimate has been done, so the employer can identify how long a particular respirator can be worn in a given situation, per the respirator manufacturer’s recommendations.

II.4.5 Voluntary respirator use

Voluntary respirator use falls under Appendix D of the standard (1910.134). Employees can choose to wear a respirator even when exposures are below the exposure limit, to provide additional comfort or protection if allowed by their employer. However, the respirator must be selected properly and also worn properly, or it can become a hazard to the worker. An employee who is wearing a respirator voluntarily must read and follow instructions provided by the respirator manufacturer and should wear the respirator in environments for which the respirator is designated (e.g., a particulate respirator cannot be worn to protect against vapors). The employer must establish and implement those elements of a written respiratory protection program to ensure any employee using a respirator is medically able to use the respirator, although those requirements do not apply to the voluntary use of filtering dust masks.

Reference: OSHA Safety and Health Topics- Respiratory Protection

Additional resources for program development:

• OSHA Respiratory Protection Standard:

• OSHA Respiratory Protection eTool:

• Sample respiratory protection program:

• OSHA Appendix D:

• Fit testing protocols:

• Medical Clearance:

• Assigned Protection Factors for the Revised Respiratory Protection Standard
II.5 Lockout/tagout

"Lockout/tagout" refers to specific practices and procedures to safeguard employees from the unexpected energization or startup of machinery and equipment or the release of hazardous energy during service or maintenance activities. This requires, in part, that a designated individual turns off and disconnects the machinery or equipment from its energy source(s) before performing service or maintenance and the authorized employee(s) either lock or tag the energy-isolating device(s) to prevent the release of hazardous energy. Authorized employee(s) also should take steps to verify the energy has been isolated effectively.

Lockout devices hold energy-isolation devices in a safe or “off” position. They provide protection by preventing machines or equipment from becoming energized they cannot be removed without a key or other unlocking mechanism. Tagout devices, by contrast, are prominent warning signs that fasten to energy-isolating devices to warn employees not to reenergize the machine while it is being serviced or repaired.

Lockout/tagout is required to be formally implemented in the workplace in the form of an energy control program.

As part of an energy-control program, employers must:

II.5.1 Energy control procedures

Establish energy-control procedures for removing the energy supply from machines and for putting appropriate lockout or tagout devices on the energy-isolating devices to prevent unexpected re-energization.

The energy-control procedures must outline the techniques employees will use to control hazardous energy sources, as well as the means that will be used to enforce compliance. These procedures must provide employees at least the following information:

- A statement on how to use the procedures.
- Specific procedural steps to shut down, isolate, block, and secure machines.
- Specific steps designating the safe placement, removal, and transfer of lockout/tagout devices and identifying who has responsibility for the lockout/tagout devices.
- Specific requirements for testing machines to determine and verify the effectiveness of lockout devices, tagout devices, and other energy-control measures.

II.5.2 Reviewing of procedures

Inspect these procedures periodically (at least annually) to ensure they are being followed and remain effective in preventing employee exposure to hazardous energy.

The periodic inspection is intended to ensure employees are familiar with their responsibilities under the procedure and continue to implement energy-control procedures properly. The inspector, who must be an authorized person not involved in using the particular control procedure being inspected, must be able to determine the following:

- Employees are following steps in the energy-control procedure.
- Employees involved know their responsibilities under the procedure.
Part 2: Guide to Worker Safety and Health in the Marijuana Industry

II.5.3 Training

Train employees on the energy-control program, including the safe application, use and removal of energy controls.

The employer must provide initial training before starting service and maintenance activities and must provide retraining as necessary. In addition, the employer must certify the training has been given to all employees covered by the standard.

References: OSHA Control of Hazardous Energy Lockout/tagout booklet
https://www.osha.gov/Publications/3120.html

Additional resources and examples for program development:

- Example: http://osha.oregon.gov/OSHAPubs/pubform/example-energy-procedure.doc
- OSHA Lockout-Tagout Interactive Training Program:
  https://www.osha.gov/dts/osta/lototraining/
- OSHA Control of Hazardous Energy (Lockout/Tagout):
  https://www.osha.gov/SLTC/controlhazardousenergy/
- Sample written program for control of hazardous energy
  http://www.tdi.texas.gov/pubs/videoresource/oloto.doc
- NIOSH: Guidelines for Controlling Hazardous Energy During Maintenance and Servicing:
  http://www.cdc.gov/niosh/docs/83-125/

II.6 Fire protection plan

A fire prevention plan is intended to prevent the occurrence of fires in the workplace by targeting fuel sources and ensuring adequate building fire suppression systems. Along with local fire codes, a fire protection plan should include the operating, testing, and maintaining fixed extinguishing systems. Fixed extinguishing systems are covered under 29 CFR 1910.160 automatic sprinkler systems are covered under 29 CFR 1910.159. In addition to fixed extinguishing systems an area may include portable extinguishers. As with other fire suppression systems, portable fire extinguishers must be approved by a nationally recognized testing laboratory to verify compliance with applicable standards.

A fire prevention plan must be in writing, be kept in the workplace and be made available to employees for review. However, an employer with 10 or fewer employees may communicate the plan orally to employees. [29 CFR 1910.39(b)] Local municipalities may have different guidelines for marijuana facilities. These should be referenced and followed as appropriate.

At a minimum, a fire prevention plan must include:

- A list of all major fire hazards, proper handling and storage procedures for hazardous/flammable materials, potential ignition sources (such as welding, sparks, hot surfaces, open flames, or smoking) and their control, and the type of fire protection equipment necessary to control each major hazard.
- Procedures to control the amount of flammable and combustible waste materials that are collected and stored at the facility.
II.7 Emergency action plan

An Emergency Action Plan (EAP) is a written document to organize action during a workplace emergency. It is specific to a particular workplace and lists processes and procedures employees carry out.

Per OSHA (1910.38), the minimum elements of a written emergency action plan include:

- Procedures for reporting a fire or other emergency.
- Procedures and exit routes for emergency evacuation.
- Procedures to be followed by employees who remain to operate critical plant operations before they evacuate.
- Procedures to account for all employees after evacuation.
- A contact name for employees to obtain more information about the plan.
- Explanation on how the company will notify employees in case of an emergency.

Additional resources and examples for program development

Part 2: Guide to Worker Safety and Health in the Marijuana Industry

- Incident command resources: http://www.fema.gov/incident-command-system-resources
Works Cited


6. Occupational Safety and Health Administration (OSHA) [www.OSHA.gov](http://www.osha.gov)


8. OSHA Hearing Conservation Booklet: https://www.osha.gov/Publications/OSHA3074/osa3074.html


14. National Institute for Occupation Safety and Health (NIOSH) [www.cdc.gov/NIOSH](http://www.cdc.gov/NIOSH)

15. Washington State Department of Labor and Industries [www.lni.wa.gov](http://www.lni.wa.gov)
# Appendix A- OSHA Standards Summary


<table>
<thead>
<tr>
<th>OSHA Standard Number</th>
<th>Standard Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1904</td>
<td>Recording and reporting occupational injuries and illnesses</td>
</tr>
<tr>
<td>1910.36</td>
<td>Design and construction requirements for exit routes</td>
</tr>
<tr>
<td>1910.38</td>
<td>Emergency action plans</td>
</tr>
<tr>
<td>1910.39</td>
<td>Fire prevention plans</td>
</tr>
<tr>
<td>1910.94</td>
<td>Ventilation</td>
</tr>
<tr>
<td>1910.95</td>
<td>Occupational noise exposure</td>
</tr>
<tr>
<td>1910.101</td>
<td>Compressed gases</td>
</tr>
<tr>
<td>1910.106</td>
<td>Flammable Liquids</td>
</tr>
<tr>
<td>1910.120</td>
<td>Hazardous waste operations and emergency response</td>
</tr>
<tr>
<td>1910.132</td>
<td>Personal protective equipment: general requirements</td>
</tr>
<tr>
<td>1910.133</td>
<td>Eye and face protection</td>
</tr>
<tr>
<td>1910.134</td>
<td>Respiratory protection</td>
</tr>
<tr>
<td>1910.135</td>
<td>Head protection</td>
</tr>
<tr>
<td>1910.136</td>
<td>Foot protection</td>
</tr>
<tr>
<td>1910.137</td>
<td>Electrical protective equipment</td>
</tr>
<tr>
<td>1910.138</td>
<td>Hand protection</td>
</tr>
<tr>
<td>1910.141</td>
<td>Sanitation</td>
</tr>
<tr>
<td>1910.147</td>
<td>The control of hazardous energy (lockout/tagout)</td>
</tr>
<tr>
<td>1910.151</td>
<td>Medical services and first aid</td>
</tr>
<tr>
<td>1910.157</td>
<td>Portable fire extinguishers</td>
</tr>
<tr>
<td>OSHA Standard Number</td>
<td>Standard Name</td>
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<td>1910.159</td>
<td>Automatic sprinkler systems</td>
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<td>Employee alarm systems</td>
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<td>1910.212</td>
<td>Machinery and machine guarding</td>
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<td>1910.242</td>
<td>Hand and portable powered tools and equipment</td>
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<td>1910.263</td>
<td>Bakery equipment</td>
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<td>1910.303</td>
<td>General design standards for electrical systems</td>
</tr>
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<td>1910.335</td>
<td>Safeguards for personnel protection and electrical systems</td>
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<td>1910.1000 Table Z-1</td>
<td>Table Z-1 Limits for Air Contaminants</td>
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<td>1910.1200</td>
<td>Hazard communication</td>
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