Washington State
Liquor and Cannabis Board

Date: December 8, 2021

To: David Postman, Board Chair
Ollie Garrett, Board Member
Russ Hauge, Board Member

From: Jeff Kildahl, Policy and Rules Coordinator

Copy: Rick Garza, Agency Director
Toni Hood, Deputy Director
Justin Nordhorn, Director of Policy and External Affairs
Becky Smith, Licensing Director
Chandra Brady, Director of Enforcement and Education
Kathy Hoffman, Policy and Rules Manager

Subject: WAC 314-55-101 – Quality assurance sampling protocols; WAC 314-55-102 – Quality assurance testing; and WAC 314-55-1025 – Proficiency testing.

The Policy and Rules Coordinator requests approval to file a rule proposal (CR 102) for the rule making described in the CR 102 Memorandum attached to this order and presented at the Board meeting on December 8, 2021.

If approved for filing, the tentative timeline for the rule making process is outlined below:

December 8, 2021	Board is asked to approve filing proposed rules (CR 102). CR 102 filed with the Office of the Code Reviser. LCB webpage updated and notice circulated by rules distribution list. Formal comment period begins.
January 5, 2022	Notice published in the Washington State Register.
February 2, 2022	Public hearing held and formal comment period ends.

March 2, 2022	Board is asked to adopt rules if no substantive changes are made (CR 103). Concise Explanatory Statement provided to individuals offering written and oral comment at the public hearing, and during the formal comment period, consistent with RCW 34.05.325. CR 103 and adopted rules are filed with the Office of the Code Reviser. LCB webpage updated and notice circulated to all WSLCB GovDelivery subscribers.
April 2, 2022	Rules are effective 31 days after filing (unless otherwise specified).

_____ Approve _____ Disapprove _____ _____
David Postman, Chair Date

_____ Approve _____ Disapprove _____ _____
Ollie Garrett, Board Member Date

_____ Approve _____ Disapprove _____ _____
Russ Hauge, Board Member Date

Attachment: CR 102 Memorandum

Washington State
Liquor and Cannabis Board

CR 102 Memorandum

Regarding WAC 314-55-101 – Quality assurance sampling protocols; WAC 314-55-102 – Quality assurance testing; and WAC 314-55-1025 – Proficiency testing.

Date: December 8, 2021
Presented by: Jeff Kildahl, Policy and Rules Coordinator

Description of the Issue

In early 2018, several stakeholders, including medical marijuana patients, consumers, and licensees, urged the WSLCB to require marijuana producers and processors to test adult use marijuana crops for pesticides and heavy metals. These partners asserted that such a move, already adopted in other states, would inspire confidence among consumers, increase access to medically compliant products, and bolster sales. In August 2018, the WSLCB began the initial stages of rule development regarding marijuana quality control and product requirements. Among the rule changes being considered was whether all marijuana products should be tested for pesticides and heavy metals, because neither test is required for adult use marijuana products in Washington.

Following the urging of stakeholders, these proposed rule changes introduce in rule the requirement for pesticide testing of all marijuana products. These rule changes also allow the WSLCB to conduct randomized or investigation driven heavy metal testing through the Washington State Department of Agriculture (WSDA). In order to meet potential demand for pesticide testing, there are currently five marijuana testing labs in Washington capable of testing for the full suite of I-502 tests, along with pesticides.

Marijuana grows operate with a wide spectrum of growing techniques. Some grows are tightly controlled in indoor facilities, where plants are grown in climate-controlled chambers where every aspect of the plant's cultivation is monitored. Other grows are situated in outdoor environments and are dependent on seasonal cycles. The growing method a licensed producer utilizes, whether indoors or outdoors, is entirely a business decision of the licensee. While the variety of tests an accredited marijuana testing laboratory offers is entirely a business decision of the laboratory, many marijuana businesses are unable to select growing method based on a number of factors, including but not limited to access to capital, race, and gender. These factors present significant barriers to many licensees seeking to participate in the regulated marijuana market.

Marijuana cultivation, both indoor and outdoor, is associated with a variety of pests, bacteria, and fungi. Producers have used a wide variety of pesticides to reduce insect infestation. Pesticide misuse poses serious health risks to consumers, and exposure can result in a variety of well-document symptoms, such as difficulty breathing, abdominal pain, vomiting, dizziness, and muscle cramps. Additionally, some pesticides have been found to be carcinogenic (Taylor & Birkett, 2019).

Emerging literature and multiple studies, both nationally and globally, indicate that marijuana and marijuana products can become contaminated and must be tested to protect public health (Feldman, 2015; Subritzky, Pettigrew & Lenton, 2017; Feldman, 2015; Craven et. al., 2019; Seltenrich, 2019). Marijuana and its products can be contaminated with microbiological contaminants, such as mold or salmonella, potentially hazardous growth enhancers, and heavy metals such as chromium and lead. While marijuana in any form may be prone to contamination, extracts and concentrates may present a greater risk because any contaminants will become concentrated during processing (Seltenrich, 2019). To protect consumers against exposure to pesticides, solvents, and other contaminants, marijuana and marijuana products must be tested to ensure they are safe for human consumption.

WSLCB Stakeholder Engagement

This project has a lengthy history of rule development and extensive stakeholder engagement. The first Listen and Learn session on draft conceptual rules was held in April 2019, and the second was held in August 2019. It is important to note that these two sessions on marijuana products were among the first that the WSLCB offered to increase and enrich stakeholder engagement in the rule development process.

Initially, and understandably, in person participation was somewhat guarded as the licensed community and others became familiar with the approach, and the concept of collaborative rule making. It is also important to note that few producers and processors attended the first meeting despite all licensees receiving notice of the meeting more than two weeks in advance. By the second session, attendees were better prepared to present and discuss ideas and solutions, and the conversation continued well beyond the scheduled session time, although again, few producers and processors attended in person even though messaging was broadly distributed to all licensees through several platforms. However, several of these entities provided written comments in the way of email to the rules coordinator during the meeting. These were shared at the meetings, and throughout the rule development process.

Additionally, agency staff visited the facilities of processors, producers, and labs who wished to participate in the process. To the extent possible, the qualitative and quantitative data presented in this significant analysis represent the multiple

dimensions and broad spectrum of positions, as well as mitigation strategies offered by all participating parties. The WSLCB also coordinated rule development with staff the Washington State Department of Health, the Washington State Department of Ecology, and the Washington State Department of Agriculture where possible and appropriate.

In all, well over 350 comments were received, organized, and reviewed as part of initial development efforts. These became a part of the original CR 102 package for this project.

The Board approved the first CR 102 for this project on January 22, 2020, setting a public hearing for March 18, 2020. However, this hearing was continued based on the status of the COVID-19 outbreak and the agency transferring operations to an all-virtual and remote platform that at the time, did not offer a way to hold a public hearing. The hearing was continued, but as the pandemic surged, the Board withdrew the CR 102 on the premise that it would re-file once an appropriate platform was available. On May 27, 2020, the Board approved re-filing of the original CR 102, setting a hearing date for July 8, 2020.

The hearing was held on July 8, 2020, and based on substantive feedback resulting in substantive changes to the proposal, the Board approved a supplemental CR 102 on September 20, 2020 with a hearing date of November 18, 2020. Following this hearing, the Board reviewed all feedback, and determined that a new approach was necessary.

To assure that the agency understood and heard from the complete system – processors, producers, retailers, consumers, and others – and provide an opportunity for all in the supply chain to have an opportunity to hear the wide range of perspectives around product testing, the WSLCB hosted three Deliberative Dialogue sessions on marijuana product testing in January and February 2021. These sessions were used to inform the development of new draft conceptual rules.

Current Rule Proposal

A Listen and Learn session on the new draft conceptual rules on October 20, 2021. These sessions were announced via GovDelivery and other media platforms, and open to the public, licensees, and any interested party to encourage community input. The WSLCB is aware that this is a topic of interest to many Washington State citizens, regardless of their positionality related to the regulatory structure.

The WSLCB received a number of written and oral comments during and after the Listen and Learn session held on October 20, 2021 on a conceptual draft of this proposal. Comments continued to be offered through November 2021. These comments did not embody or represent broad licensee or lab agreement on any

specific theme or themes. These comments concerned sample collection, lot size, increased cost to producers and processors, along with comments that did not pertain to this section of rule.

Rule Necessity

Rules are needed for the following reasons:

Current testing requirements for adult use marijuana are intended to ensure that products for sale are safe and have accurate potency levels. However, Washington state adult use marijuana products are not currently required to be tested for pesticides and heavy metals, and although not precluded from doing so, many producers and processors do not perform this testing. Based on a number of elements, including consumer concern and national best practices, it has become evident that standardized testing for all marijuana products produced, processed, and sold in Washington State is necessary. Washington State is the only state with both adult use and medical programs that does not require pesticide and heavy metal testing for all products.

There is no guidance available to the WSLCB or any other state agency regulating marijuana from federal agencies who set standards for agriculture, food, and other products because marijuana remains classified as a Schedule I drug, and federally illegal. This presents regulatory challenges to the WSLCB, regulators throughout the country, and the industry since there is limited funding to support research on how marijuana tainted with potential toxins affects humans. However, while the possible health impact of consuming marijuana products with unapproved pesticides is an emerging area of research, the overarching goal of the WSLCB is to protect public health and safety, and to assure that all products sold within the I-502 market are safe for all consumers.

Description of Rule Changes

Amended Section. WAC 314-55-101 – Updates existing sample collection protocols designed to reduce product contamination during and after sampling, storage, and transportation. Updates labelling requirements for samples. Increases the maximum amount of marijuana flower that may be represented by a single I-502 panel of tests, and changes the number of one-gram flower samples required for testing. Removes allowance for labs to return any unused portion of a sample to the licensee. Updates, reorganizes and streamlines rule language where appropriate.

Amended Section. WAC 314-55-102 – Reaffirms existing protocols, and updates, reorganizes, and streamlines rule language where appropriate to assure scientific accuracy. Provides more detail regarding testing levels for required I-502 tests. Adds requirement for pesticide testing for marijuana products. Adds language allowing the WSLCB may conduct randomized or

investigation-driven testing for heavy metals. Updates rule language regarding product retesting, remediation of failed lots, expiration of certificates of analysis, and referencing of samples.

Amended Section. WAC 314-55-1025 – Updates language to include "board" where appropriate consistent with statutory reference. Adds updated reporting requirements for lab proficiency testing. language to require laboratory to authorize release all results at the same time to the laboratory and the board, or the board's vendor.

References

Craven, C. B., Wawryk, N., Jiang, P., Liu, Z. & Li, X.-F. (2019). Pesticides and trace elements in cannabis: Analytical and environmental challenges and opportunities. *Journal of Environmental Sciences*, *85*, 82–93. doi: 10.1016/j.jes.2019.04.028.

Feldman, J. (2014). Pesticide Uses in Marijuana Production. *Beyond Pesticides*, *34*(4).

Seltenrich, N. (2019). Cannabis Contaminants: Regulating Solvents, Microbes, and Metals in Legal Weed. *Environmental Health Perspectives*, *127*(8), 082001. doi: 10.1289/ehp5785.

Seltenrich, N. (2019). Into the Weeds: Regulating Pesticides in Cannabis. *Environmental Health Perspectives*, *127*(4), 042001. doi: 10.1289/ehp5265.

Subritzky, T., Pettigrew, S. & Lenton, S. (2017). Into the void: Regulating pesticide use in Colorado's commercial cannabis markets. *International Journal of Drug Policy*, *42*, 86–96. doi: 10.1016/j.drugpo.2017.01.014.

Taylor, A. & Birkett, J. W. (2019). Pesticides in cannabis: A review of analytical and toxicological considerations. *Drug Testing and Analysis*. doi: 10.1002/dta.2747.

CODE REVISER USE ONLY

PROPOSED RULE MAKING

CR-102 (December 2017)
(Implements RCW 34.05.320)
Do **NOT** use for expedited rule making

Agency: Washington State Liquor and Cannabis Board

☒ **Original Notice**

☐ **Supplemental Notice to WSR _____**

☐ **Continuance of WSR _____**

☒ **Preproposal Statement of Inquiry was filed as WSR** 18-17-041 **; or**

☐ **Expedited Rule Making--Proposed notice was filed as WSR _____; or**

☐ **Proposal is exempt under RCW 34.05.310(4) or 34.05.330(1); or**

☐ **Proposal is exempt under RCW _____.**

Title of rule and other identifying information: (describe subject) WAC 314-55-101 – Quality assurance sampling protocols; WAC 314-55-102 – Quality assurance testing; and WAC 314-55-1025 – Proficiency testing. The Washington State Liquor and Cannabis Board (WSLCB) proposes amendments to current marijuana product testing standards to require pesticide testing for all marijuana produced, processed, and sold in Washington State, and randomized or investigation driven testing of marijuana for heavy metals.

Hearing location(s):

Date:	**Time:**	**Location:** (be specific)	**Comment:**
February 2, 2022	10:00 am	In response to the coronavirus disease 2019 (COVID-19) public health emergency, the Board will not provide a physical location for this hearing to promote social distancing and the safety of the citizens of Washington state. A virtual public hearing, without a physical meeting space, will be held instead. Board members, presenters, and staff will all participate remotely. The public may login using a computer or device, or call-in using a phone, to listen to the meeting through the Microsoft Teams application. The public may provide verbal comments during the specified public comment and rules hearing segments.	For more information about Board meetings, please visit https://lcb.wa.gov/Boardmeetings/Board_meetings.

Date of intended adoption: Not earlier than February 16, 2022 (Note: This is **NOT** the **effective** date)

Submit written comments to:

Name: Jeff Kildahl
Address: 1025 Union Avenue SE, Olympia, WA 98501
Email: rules@lcb.wa.gov
Fax: 360-664-9689
Other:
By (date) February 2, 2022

Assistance for persons with disabilities:

Contact Anita Bingham, ADA Coordinator, Human Resources
Phone: 360-664-1739

Fax: 360-664-9689
TTY: 7-1-1 or 1-800-833-6388
Email: anita.bingham@lcb.wa.gov
Other:
By (date) January 26, 2022

Purpose of the proposal and its anticipated effects, including any changes in existing rules: The purpose of the proposed rules is to require that all marijuana products produced and sold in Washington State are tested for pesticides. The proposed rules also allow the Washington State Liquor and Cannabis Board (WSLCB) to conduct random or investigation driven testing for heavy metals in marijuana products. It is anticipated that the effect of these rules will be to promote the overarching goal of the WSLCB to protect public health and safety, and to assure that all products sold within the I-502 market are safe for all consumers.

Changes in existing rules include increasing the maximum amount of marijuana flower that may be represented by a single I-502 panel of tests and updating the number of one-gram flower samples required; revised sample collection and storage procedures; elimination of the ability of certified labs to return unused portions of samples to licensees; revised guidance to labs regarding when to reject or fail a sample; updated lab testing requirements and procedures; updated and expanded information regarding testing levels for water activity, potency analysis, foreign matter inspection, microbial screening, mycotoxin screening, and residual solvent screening; addition of required pesticide screening and randomized or investigation driven testing for heavy metals; updated rule language regarding product retesting, remediation of failed lots, expiration of certificates of analysis, and referencing of samples; and updated reporting requirements for lab proficiency testing.

This proposal also renames and more appropriately refers to marijuana quality control sampling protocols and marijuana quality control and assurance testing standards. While quality control is a set of activities designed to evaluate a product, quality assurance pertains to activities that are designed to ensure that a process is adequate and the system meets its objectives. In contrast, quality control focuses on finding defects or anomalies in a product or deliverable, and checks whether defined requirements are the right requirements. Testing is one example of a quality control activity, but there are many more such activities that make up quality control. For these reasons, this proposal renames WAC 314-55-101 and WAC 315-55-102.

Reasons supporting proposal: Existing testing requirements for adult use marijuana are intended to safeguard products for sale and list potency levels. However, Washington recreational marijuana products are currently not required to be tested for pesticides or heavy metals, and although not precluded from doing so, many producers and processors do not test for either. Based on a number of elements, including consumer concern and national best practices, it has become evident that mandatory pesticide testing for all marijuana products produced, processed, and sold in Washington State is necessary, and that random or investigation driven heavy metal testing conducted by the WSLCB is also needed.

There is no product testing guidance available to the WSLCB or any other state agency regulating marijuana from federal agencies who set standards for agriculture, food, and other products because marijuana remains classified as a Schedule I drug, and federally illegal. This presents regulatory challenges to the WSLCB, regulators throughout the country, and the industry since there is limited funding to support research on how marijuana tainted with potential toxins affects humans. However, while the possible health impact of consuming marijuana products with unapproved pesticides is an emerging area of research, the overarching goal of the WSLCB is to protect public health and safety, and to assure that all products sold within the I-502 market are safe for all consumers.

With the recent increase in hemp-derived delta-8, delta-9, and other unregulated products entering the I-502 market, it is important at this time to require pesticide testing and random or investigation driven heavy metal testing for adult use marijuana products to protect public health and safety.

Statutory authority for adoption: RCW 69.50.345 and RCW 69.50.348.

Statute being implemented: RCW 69.50.345 and RCW 69.50.348

Is rule necessary because of a:

Federal Law?	☐ Yes	☒ No
Federal Court Decision?	☐ Yes	☒ No
State Court Decision?	☐ Yes	☒ No

If yes, CITATION:

Agency comments or recommendations, if any, as to statutory language, implementation, enforcement, and fiscal matters: None

Name of proponent: (person or organization) Washington State Liquor and Cannabis Board

☐ Private
☐ Public
☒ Governmental

Name of agency personnel responsible for:

	Name	Office Location	Phone
Drafting:	Jeff Kildahl, Policy and Rules Coordinator	1025 Union Avenue SE, Olympia WA, 98501	360-664-1781
Implementation:	Kendra Hodgson, Marijuana Examiners Unit Manager	1025 Union Avenue SE, Olympia, WA. 98501	360-664-4555
Enforcement:	Chandra Brady, Director of the Enforcement and Education	1025 Union Avenue SE, Olympia, WA, 98501	360-664-1726

Is a school district fiscal impact statement required under RCW 28A.305.135? ☐ Yes ☒ No

If yes, insert statement here:

The public may obtain a copy of the school district fiscal impact statement by contacting:
Name:
Address:
Phone:
Fax:
TTY:
Email:
Other:

Is a cost-benefit analysis required under RCW 34.05.328?

☒ Yes: A preliminary cost-benefit analysis may be obtained by contacting:
Name: Jeff Kildahl
Address: 1025 Union Avenue SE, Olympia WA 98501
Phone: 360-664-1781
Fax: 360-664-9689
TTY:
Email: rules@lcb.wa.gov
Other:

☐ No: Please explain:

Regulatory Fairness Act Cost Considerations for a Small Business Economic Impact Statement:

This rule proposal, or portions of the proposal, **may be exempt** from requirements of the Regulatory Fairness Act (see chapter 19.85 RCW). Please check the box for any applicable exemption(s):

☐ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.061 because this rule making is being adopted solely to conform and/or comply with federal statute or regulations. Please cite the specific federal statute or regulation this rule is being adopted to conform or comply with, and describe the consequences to the state if the rule is not adopted.
Citation and description:

☐ This rule proposal, or portions of the proposal, is exempt because the agency has completed the pilot rule process defined by RCW 34.05.313 before filing the notice of this proposed rule.

☐ This rule proposal, or portions of the proposal, is exempt under the provisions of RCW 15.65.570(2) because it was adopted by a referendum.

☒ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.025(3). Check all that apply:

- ☐ RCW 34.05.310 (4)(b) (Internal government operations)
- ☐ RCW 34.05.310 (4)(c) (Incorporation by reference)
- ☒ RCW 34.05.310 (4)(d) (Correct or clarify language)
- ☐ RCW 34.05.310 (4)(e) (Dictated by statute)
- ☐ RCW 34.05.310 (4)(f) (Set or adjust fees)
- ☐ RCW 34.05.310 (4)(g) ((i) Relating to agency hearings; or (ii) process requirements for applying to an agency for a license or permit)

☒ This rule proposal, or portions of the proposal, is exempt under RCW 19.85.025(4): WAC 314-55-1025 .

Explanation of exemptions, if necessary:

COMPLETE THIS SECTION ONLY IF NO EXEMPTION APPLIES

If the proposed rule is **not exempt**, does it impose more-than-minor costs (as defined by RCW 19.85.020(2)) on businesses?

☐ No Briefly summarize the agency's analysis showing how costs were calculated.

☒ Yes Calculations show the rule proposal likely imposes more-than-minor cost to businesses, and a small business economic impact statement is required. Insert statement here:

What is the scope of the rule package?

Compliance with the proposed, specific requirements described WAC 314-55-101 and WAC 314-55-102 will likely result in additional compliance costs. This includes the requirement to test all marijuana products for pesticides, in addition to the current required suite of tests for adult use products.

Which businesses are impacted by the proposed rule package? What was their North American Industry Classification (NAICS) code or codes? What are their minor cost thresholds?

As of July 2021, there were 1,306 licensed marijuana producers and processers in the State of Washington. Of those businesses, nine employ more than 50 individuals, indicating that 99.3 percent of the businesses in this industry are considered small. Any licensed business producing marijuana flower and/or intermediate products for which existing regulations require testing would incur costs under the proposed rule. Licensed business that are not currently operating, or that produce only flower marked for extraction would not be affected by this rule.

"Minor cost" is defined in RCW 19.85.020 as a cost per business that is less than 0.3 percent of annual revenue or income or one hundred dollars, whichever is greater, or one percent of annual payroll. As revenue information is more readily available than payroll, the analysis calculates minor cost thresholds based on revenues of business entities in the affected industries. The minor cost threshold is $3,466 (2020$) per business within the industry, based on the average annual revenues reported for calendar years 2018 through 2020 and the number of licensed producers and/or processors as of August 2021.

TYPE OF BUSINESS[1]	# OF BUSINESSES IN WASHINGTON[2]	PERCENTAGE OF BUSINESSES CONSIDERED SMALL[3]	AVERAGE ANNUAL REVENUES (2020$)[4]	MINOR COST THRESHOLD = 0.3% AVERAGE ANNUAL REVENUES (2020$)
Cannabis Producer and/or Processor	1,306	99.3%	$1,155,374	$3,466

Notes:

1. Relevant North American Industry Classification System (NAICS) codes for this industry include the following:
   111998 – All Other Miscellaneous Crop Farming, including Marijuana Grown in an Open Field
   111419 – Other Food Crops Grown Under Cover, including Marijuana Grown Under Cover
   115112 – Soil Preparation, Planting, and Cultivating
   325411 – Medicinal and Botanical Manufacturing
   311812 – Commercial Bakeries
   311991 - Perishable Food Manufacturing

424590 – Other Farm Product Raw Material Merchant Wholesalers, including Marijuana Merchant wholesalers
2. Represents the total number of cannabis producer, producer/processor, and processor licenses as of July 2021 (Email communications from WSLCB August 24, 2021).
3. Number of businesses with <50 employees of all producer/processor license holders (9) provided by the Employment Security Division (ESD) via email on September 20, 2021.
4. Average annual revenues for all licensees that reported revenues between 2018 and 2020, provided by WSLCB on October 22, 2021.

[7] Email communications from WSLCB to IEc, August 24, 2021. Licensed businesses include holders of three license types – Producer, Processor, and Producer/Processor. This report refers to this group of businesses collectively as "producers and processors".

[8] Number of large businesses provided by the Employment Security Division (ESD) via email on September 20, 2021.

Does the rule have a disproportionate impact on small businesses?

When proposed rule changes cause more than minor costs to small businesses, the RFA (RCW 19.85.040) requires an analysis that compares the cost of compliance for small business with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules to determine whether the costs are considered disproportionate. Over 99 percent of the regulated businesses in this industry are small. As a result, the rule is found to disproportionately impact small businesses, and this SBEIS accordingly identifies and documents cost mitigation strategies.

Did the agency make an effort to reduce the impact of the rule?

RCW 19.85.030 requires that, when a rule is expected to disproportionately impact small businesses, the agency consider several methods for reducing the impact of the rule on small businesses. The proposed rule itself includes several provisions that are intended to reduce the compliance costs for small businesses.

RULE PROVISION	DESCRIPTION	MECHANISM OF COST REDUCTION
Addition of random or investigation-driven heavy metals screening.	WSLCB may conduct investigation-driven or random spot testing of flower and intermediate product for heavy metals.	Businesses do not have to incur the costs of heavy metals testing on all amounts of flower or batches of intermediate product.
Increase in maximum amount of marijuana flower that may be represented by a single I-502 panel of tests.	Increasing the amount of flower that can be tested using a single I-502 test panel from one test panel per five-pound lot to a single test panel per amounts up to 50 pounds.	Businesses that are able to prepare larger quantities of flower for testing can reduce the number of pesticides tests required under the proposed rule, as well as reduce the number of I-502 test panels currently required, which reduces their testing costs.
Change in number of one-gram flower samples required.	For amounts of flower greater than five pounds, reducing the number of one-gram samples required per pound of tested flower.	On a per pound basis, reduces the amount of flower diverted to testing, instead allowing that flower to be sold, and reducing lost revenues associated with diverted flower.

During development of the proposed rule, through an amendment to WAC 314-55-075, WSLCB increased the allowable canopy size for Tier 1 producers to allow for larger harvests, increasing the ability of those producers to take advantage of the proposed rule provision that allows for amounts of flower up to 50 pounds to be tested with a single panel of tests.
In addition, WSLCB considered a range of suggestions from industry representatives as to how the costs of the rule could be reduced, including:

1. Reduce the number of existing mandatory I-502 tests to accommodate pesticide testing without increasing costs to businesses.
2. Reduce the amount of flower necessary to divert for testing (i.e., maintaining the same four-gram requirement for five-pound lots).
3. Reduce the total number and frequency of pesticides tests required, for example:
    - Regular third-party testing periodically (e.g., quarterly or once a month), funded by the industry.
    - Allowing for more than one strain to be tested together as a single lot, so long as strains are grown in the same indoor room, or receive the same outdoor treatment.
4. Implement measures that might facilitate an ability for producers and processors to raise the price of their products:
    - Consider an education campaign to inform retailers and consumers of the benefits of pesticides and heavy metals testing; could help increase prices to allow for producer/processors to pass on some of the increased cost of testing.
    - Consider revisions to the structure of the industry in which producers may pass costs of testing onto retailers.

5. Shift testing requirements from flower and intermediate products to end products.
6. Consider having WSLCB test flower at the retailer level, rather than having flower tested by producers.
    - Consider increased enforcement through increased random sampling by LCB to ensure those acting fairly are not disadvantaged.

WSLCB considered these and other cost reduction options presented by the industry. However, LCB has determined they cannot be included for multiple reasons, including that they didn't meet the intended goals of the rule (e.g., testing end products after they were already placed on retail shelves), did not meaningfully reduce the costs of the rule (e.g., eliminating existing I-502 panel tests identified by the industry), were not feasible due to constraints (e.g., reducing the number of one-gram samples of flower required to test a five-pound amount of flower), or were outside of the bounds of the rule.

The regulating agency must consider delaying compliance timetables as a potential cost mitigation option. During this rulemaking, WSLCB did consider delaying the timeframe for compliance with the heavy metals testing requirement at the request of the industry. As heavy metals testing is no longer required under the proposed rule, WSLCB is no longer considering a delay in compliance timing.

Other types of cost mitigation strategies that must be considered are not relevant to this rulemaking:

- Reducing the frequency of inspections: This rule does not change the rate at which inspections carried out by WSLCB would occur.
- Simplifying, reducing, or eliminating recordkeeping and reporting requirements: The rule does not impose any additional reporting or recordkeeping requirements on the industry.
- Reducing or modifying fine schedules for non-compliance: This rule does not affect fines for noncompliance.

Did the agency involve small businesses in the rule development process?

Throughout the rule-development process, the WSLCB has engaged with small businesses likely to be affected by the rule. In 2019, WSLCB hosted two "listen and learn" sessions, inviting industry discussion and feedback on the proposed rules. The WSLCB's stakeholder process encouraged interested parties and industry partners to:

- Identify burdensome areas of existing and proposed rules;
- Proposed initial or draft rule changes; and
- Refine those changes.

In 2021, WSLCB hosted a series of three Deliberative Dialog Sessions to allow the regulated community an opportunity to voice their perspectives on cannabis quality assurance testing. The three sessions focused on the perspectives of three distinct elements of the supply chain affected by changes to cannabis quality assurance testing – consumers, producers and processors, and testing labs, respectively. Information collected during these sessions further informed development of the proposed rule.

The proposed rule went through several stages of edits, review, discussion, and then further refinement before arriving at the final proposal. The end result of this process is a proposed rule that would provide a framework and guidance for testing marijuana products that supports the overarching WSLCB goal of public health and safety.

A summary of the description of issues related to the proposed rule set and how the agency collaborated with stakeholders and industry partners to mitigate potential burden associated with rule compliance is more fully described in the Significant Analysis prepared consistent with RCW 34.05.328, and offered as part of this rule proposal.

To support development of this SBEIS, WSLCB invited licensed businesses to participate in a one-hour interview with the authors of the SBEIS. WSLCB selected 25 producers and/or processors representing a range of business types, producer tiers, business sizes, and geographies to participate in the interviews. WSLCB's contractor contacted prospective interviewees via email or phone call to schedule interviews. Potential interviewees were given several options within a one-month window for an interview, with additional times and dates offered if those originally proposed were not compatible with interviewee schedules. In the case that prospective interviewees did not respond after the first contact, they were contacted two to three times in additional attempts to schedule an interview. Ultimately, interviews were conducted with 14 producer/processors and 4 processors. Additional opportunity for public comment will be available when the proposed rule is published.

To solicit information to support this SBEIS from as broad a sample of licensed businesses as possible, WSLCB also worked with its contractor to design an online survey targeted to collecting key data points and business thoughts regarding potential provisions of the proposed rule. WSLCB invited all licensed businesses to participate in this survey, which was distributed by email on September 17, 2021. Of the 4,820 email recipients representing license holders to whom the survey was provided, 116 (2 percent) provided a response by the September 24, 2021 deadline.

Will businesses have to hire or fire employees because of the requirements in the rule?

The impacts to individual producers and processors would depend on their ability to limit their increased costs by increasing the amount of flower that is tested per testing panel, and to pass on increased testing costs (in the form of higher prices to retailers). However, the proposed rule is not expected to affect the amount of cannabis produced. Thus, the proposed rule is unlikely to affect the overall (i.e. industry-wide) number of employees of producer/processors. For example, if increased testing costs lead some smaller entities to cease production, other entities may produce larger volumes. While the additional testing costs may cause some small businesses to close if they are unable to pass on the increased testing costs, the likelihood of this occurring is unknown.

The extent to which employment may change within an individual business would depend on the specific costs incurred by that business and its ability to absorb those costs by reducing costs in other areas, raising prices, or reducing profits, for example. Several interviewees suggested that the increased costs of pesticide testing may be substantial enough to result in reduction of staff hours or release of staff. One interviewee noted that there are substantial operating costs associated with marijuana production and processing, and that modifications to employment is oftentimes the only available option for reducing costs. Conversely, at least one interviewee anticipated that compliance with the new regulations may require him to hire an additional employee. Overall, given the relatively low costs of the rule compared to revenues reported for these businesses, it seems unlikely that the costs of the rule would result in widespread reductions in employment across these businesses.

The public may obtain a copy of the small business economic impact statement or the detailed cost calculations by contacting:

Name: Jeff Kildahl
Address: 1025 Union Avenue SE, Olympia, WA 98504
Phone: 360-664-1781
Fax: 360-664-9689
TTY:
Email: rules@lcb.wa.gov
Other:

Date: December 8, 2021	**Signature:** Place signature here
Name: David Postman	
Title: Chair	

AMENDATORY SECTION (Amending WSR 17-12-032, filed 5/31/17, effective 8/31/17)

WAC 314-55-101 Quality ((~~assurance sampling protocols~~)) control sampling. (1) ((~~To ensure quality assurance samples submitted to certified third-party laboratories (certified labs) are representative from the lot or batch from which they were sampled as required in RCW 69.50.348, licensed producers, licensed processors, certified labs, and their employees must adhere to the minimum sampling protocols as provided in this section.~~

~~(2) **Sampling protocols for all marijuana product lots and batches:**~~

~~(a) Samples must be deducted in a way that is most representative of the lot or batch and maintains the structure of the marijuana sample. Licensees, certified labs, and their employees may not adulterate or change in any way the representative sample from a lot or batch before submitting the sample to certified labs. This includes adulterating or changing the sample in any way as to inflate the level of potency, or to hide any microbiological contaminants from the required microbiological screening such as, but not limited to:~~

~~(i) Adulterating the sample with kief, concentrates, or other extracts;~~

~~(ii) Treating a sample with solvents to hide the microbial count of the lot or batch from which it was deducted. This subsection does not prohibit the treatment of failed lots or batches with methods approved by the WSLCB; or~~

~~(iii) Pregrinding a flower lot sample.~~

~~(b) All samples must be taken in a sanitary environment using sanitary practices and ensure facilities are constructed, kept, and maintained in a clean and sanitary condition in accordance with rules and as prescribed by the Washington state department of agriculture under chapters 16-165 and 16-167 WAC.~~

~~(c) Persons collecting samples must wash their hands prior to collecting a sample from a lot or batch, wear appropriate gloves while preparing or deducting the lot or batch for sample collection, and must use sanitary utensils and storage devices when collecting samples.~~

~~(d) Samples must be placed in a sanitary plastic or glass container, and stored in a location that prevents the propagation of pathogens and other contaminants, such as a secure, low-light, cool and dry location.~~

~~(e) The licensee must maintain the lot or batch from which the sample was deducted in a secure, low-light, cool, and dry location to prevent the marijuana from becoming contaminated or losing its efficacy.~~

~~(f) Each quality assurance sample must be clearly marked "quality assurance sample" and be labeled with the following information:~~

~~(i) The sixteen digit identification number generated by the traceability system;~~

~~(ii) The license number and name of the certified lab receiving the sample;~~

~~(iii) The license number and trade name of the licensee sending the sample;~~

~~(iv) The date the sample was collected; and~~

~~(v) The weight of the sample.~~)) All licensed marijuana processors, producers, certified labs, and certified lab employees must com-

ply with the sampling procedures described in this section, consistent with RCW 69.50.348. Noncompliance may result in disciplinary action as described in this chapter and applicable law.

(2) **Sample collection.** All samples of marijuana, useable marijuana, or marijuana-infused products must be submitted to a certified lab for testing consistent with this chapter.

(a) All samples must be deducted, stored, and transported in a way that prevents contamination and degradation.

(b) To maximize sample integrity, samples must be placed in a sanitary container and stored in a location that prevents contamination and degradation.

(c) Each quality control sample container must be clearly marked "quality control sample" and labeled with the following information:

(i) The certificate number and name of the certified lab receiving the sample;

(ii) The license number and registered trade name of the licensee sending the sample;

(iii) The date the sample was collected; and

(iv) The weight of the marijuana, useable marijuana, or marijuana-infused product the sample was collected from.

(d) Sampling and analysis requirements apply to all marijuana products regulated by the board.

(3) **Additional sampling protocols for ((~~flower lots~~)) quantities of marijuana flower:**

(a) ((~~Licensees or certified labs must collect a minimum of four separate samples from each marijuana flower lot up to five pounds. Licensees or certified labs may collect more samples than this minimum, but must not collect less. The~~)) Samples must be of roughly equal weight not less than one gram each. Each sample must be deducted from a harvest as defined in WAC 314-55-010(14).

(b) ((~~The four separate samples must be taken from different quadrants of the flower lot. A quadrant is the division of a lot into four equal parts. Dividing a lot into quadrants prior to collecting samples must be done in a manner that ensures the samples are collected from four evenly distributed areas of the flower lot and may be done visually or physically.~~

~~(c) The four samples may be placed together in one container conforming to the packaging and labeling requirements in subsection (2) of this section for storage and transfer to a certified lab.~~)) For marijuana flower weighing up to 10 pounds, a minimum of eight samples must be taken.

(c) For marijuana flower weighing 10 pounds or more but less than 20 pounds, a minimum of 12 samples must be taken.

(d) For marijuana flower weighing 20 pounds or more but less than 30 pounds, a minimum of 15 samples must be taken.

(e) For marijuana flower weighing 30 pounds or more but less than 40 pounds, a minimum of 18 samples must be taken.

(f) For marijuana flower weighing 40 pounds or more but not more than 50 pounds, a minimum of 19 samples must be taken.

(4) **Sample retrieval and transportation.** Certified labs may retrieve samples from a marijuana licensee's licensed premises and transport the samples directly to the lab. ((~~Certified labs may also return any unused portion of the samples.~~))

(5) Certified labs ((~~may~~)) must reject or fail a sample if the lab has reason to believe the sample was not collected in the manner required by this section, adulterated in any way, contaminated with

known or unknown solvents, or manipulated in a manner that violates the sampling protocols, limit tests, or action levels.

((~~(6) The WSLCB or its designee will take immediate disciplinary action against any licensee or certified lab that fails to comply with the provisions of this section or falsifies records related to this section including, without limitation, revoking the license the licensed producer or processor, or certification of the certified lab.~~))

AMENDATORY SECTION (Amending WSR 17-12-032, filed 5/31/17, effective 8/31/17)

WAC 314-55-102 Quality assurance ((~~testing~~)) and quality control. ((~~A third-party testing lab must be certified by the WSLCB or the WSLCB's vendor as meeting the WSLCB's accreditation and other requirements prior to conducting quality assurance tests required under this section.~~

~~(1) **Quality assurance fields of testing.** Certified labs must be certified to the following fields of testing by the WSLCB or its designee and must adhere to the guidelines for each quality assurance field of testing listed below, with the exception of mycotoxin, heavy metal, or pesticide residue screening. Certification to perform mycotoxin, heavy metals and pesticides may be obtained but is not required to obtain certification as a testing lab. A lab must become certified in all fields of testing prior to conducting any testing or screening in that field of testing, regardless of whether the test is required under this section.~~

~~(a) **Potency analysis.**~~

~~(i) Certified labs must test and report the following cannabinoids to the WSLCB when testing for potency:~~

~~(A) THCA;~~

~~(B) THC;~~

~~(C) Total THC;~~

~~(D) CBDA;~~

~~(E) CBD; and~~

~~(F) Total CBD.~~

~~(ii) Calculating total THC and total CBD.~~

~~(A) Total THC must be calculated as follows, where M is the mass or mass fraction of delta-9 THC or delta-9 THCA: M total delta-9 THC = M delta-9 THC + (0.877 x M delta-9 THCA).~~

~~(B) Total CBD must be calculated as follows, where M is the mass or mass fraction of CBD and CBDA: M total CBD = M CBD + (0.877 x M CBDA).~~

~~(iii) Regardless of analytical equipment or methodology, certified labs must accurately measure and report the acidic (THCA and CBDA) and neutral (THC and CBD) forms of the cannabinoids.~~

~~(b) **Potency analysis for flower lots.**~~

~~(i) Certified labs must test and report the results for the required flower lot samples as described in WAC 314-55-101(3) for the following required cannabinoids:~~

~~(A) THCA;~~

~~(B) THC;~~

~~(C) Total THC;~~

~~(D) CBDA;~~

~~(E) CBD; and~~

(F) Total CBD.

(ii) Calculating total THC and total CBD.

(A) Total THC must be calculated as follows, where M is the mass or mass fraction of delta-9 THC or delta-9 THCA: M total delta-9 THC = M delta-9 THC + (0.877 x M delta-9 THCA).

(B) Total CBD must be calculated as follows, where M is the mass or mass fraction of CBD and CBDA: M total CBD = M CBD + (0.877 x M CBDA).

(c) Certified labs may combine in equal parts multiple samples from the same flower lot for the purposes of the following tests after the individual samples described in WAC 314-55-101(3) have been tested for potency analysis.

(i) **Moisture analysis.** The sample and related lot or batch fails quality assurance testing for moisture analysis if the results exceed the following limits:

(A) Water activity rate of more than 0.65 a_w; and

(B) Moisture content more than fifteen percent.

(ii) **Foreign matter screening.** The sample and related lot or batch fail quality assurance testing for foreign matter screening if the results exceed the following limits:

(A) Five percent of stems 3mm or more in diameter; and

(B) Two percent of seeds or other foreign matter.

(iii) **Microbiological screening.** The sample and related lot or batch fail quality assurance testing for microbiological screening if the results exceed the following limits:

	Enterobacteria (bile-tolerant gram-negative bacteria)	***E. coli* (pathogenic strains) and *Salmonella spp.***
Unprocessed Plant Material	10^4	Not detected in 1g
Extracted or processed Botanical Product	10^3	Not detected in 1g

(iv) **Mycotoxin screening.** The sample and related lot or batch fail quality assurance testing for mycotoxin screening if the results exceed the following limits:

(A) Total of Aflatoxin B1, B2, G1, G2: 20 µg/kg of substance; and

(B) Ochratoxin A: 20 µg/kg of substance.

(d) **Residual solvent screening.** Except as otherwise provided in this subsection, a sample and related lot or batch fail quality assurance testing for residual solvents if the results exceed the limits provided in the table below. Residual solvent results of more than 5,000 ppm for class three solvents, 50 ppm for class two solvents, and 2 ppm for class one solvents as defined in *United States Pharmacopoeia, USP 30 Chemical Tests / <467> - Residual Solvents (USP <467>)* not listed in the table below fail quality assurance testing. When residual solvent screening is required, certified labs must test for the solvents listed in the table below at a minimum.

Solvent*	**ppm**
Acetone	5,000
Benzene	2
Butanes	5,000
Cyclohexane	3,880
Chloroform	2
Dichloromethane	600

Solvent*	ppm
Ethyl acetate	5,000
Heptanes	5,000
Hexanes	290
Isopropanol (2-propanol)	5,000
Methanol	3,000
Pentanes	5,000
Propane	5,000
Toluene	890
Xylene**	2,170

*And isomers thereof.
**Usually 60% *m*-xylene, 14% *p*-xylene, 9% *o*-xylene with 17% ethyl benzene.

(c) **Heavy metal screening.** A sample and related lot or batch fail quality assurance testing for heavy metals if the results exceed the limits provided in the table below.

Metal	µ/daily dose (5 grams)
Inorganic arsenic	10.0
Cadmium	4.1
Lead	6.0
Mercury	2.0

(2) **Quality assurance testing required.** The following quality assurance tests are the minimum required tests for each of the following marijuana products, respectively. Licensees and certified labs may elect to do multiple quality assurance tests on the same lot or testing for mycotoxin, pesticides, or heavy metals pursuant to chapter 246-70 WAC.

(a) **General quality assurance testing requirements for certified labs.**

(i) Certified labs must record an acknowledgment of the receipt of samples from producers or processors in the WSLCB seed to sale traceability system. Certified labs must also verify if any unused portion of the sample was destroyed or returned to the licensee after the completion of required testing.

(ii) Certified labs must report quality assurance test results directly to the WSLCB traceability system when quality assurance tests for the field of testing are required within twenty-four hours of completion of the test(s).

(iii) Certified labs must fail a sample if the results for any limit test are above allowable levels regardless of whether the limit test is required in the testing tables in this section.

(b) **Marijuana flower lots and other material lots.** Marijuana flower lots or other material lots require the following quality assurance tests:

Product	Test(s) Required
Lots of marijuana flowers or other material that will not be extracted	1. Moisture content 2. Potency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening

(c) **Intermediate products.** Intermediate products must meet the following requirements related to quality assurance testing:

(i) All intermediate products must be homogenized prior to quality assurance testing;

(ii) For the purposes of this section, a batch is defined as a single run through the extraction or infusion process;

(iii) A batch of marijuana mix may not exceed five pounds and must be chopped or ground so no particles are greater than 3 mm; and

(iv) All batches of intermediate products require the following quality assurance tests:

Product	Test(s) Required Intermediate Products
Marijuana mix	1. Moisture content* 2. Potency analysis 3. Foreign matter inspection* 4. Microbiological screening 5. Mycotoxin screening
Concentrate or extract made with hydrocarbons (solvent based made using n-butane, isobutane, propane, heptane, or other solvents or gases approved by the board of at least 99% purity)	1. Potency analysis 2. Mycotoxin screening* 3. Residual solvent test
Concentrate or extract made with a CO_2 extractor like hash oil	1. Potency analysis 2. Mycotoxin screening* 3. Residual solvent test
Concentrate or extract made with ethanol	1. Potency analysis 2. Mycotoxin screening* 3. Residual solvent test
Concentrate or extract made with approved food grade solvent	1. Potency analysis 2. Microbiological screening* 3. Mycotoxin screening* 4. Residual solvent test
Concentrate or extract (nonsolvent) such as kief, hash, rosin, or bubble hash	1. Potency analysis 2. Microbiological screening 3. Mycotoxin screening
Infused cooking oil or fat in solid form	1. Potency analysis 2. Microbiological screening* 3. Mycotoxin screening*

* Field of testing is only required if using lots of marijuana flower and other plant material that has not passed QA testing.

(d) **End products.** All marijuana, marijuana-infused products, marijuana concentrates, marijuana mix packaged, and marijuana mix infused sold from a processor to a retailer require the following quality assurance tests:

Product	Test(s) Required End Products
Infused solid edible	Potency analysis
Infused liquid (like a soda or tonic)	Potency analysis
Infused topical	Potency analysis

Product	Test(s) Required End Products
Marijuana mix packaged (loose or rolled)	Potency analysis
Marijuana mix infused (loose or rolled)	Potency analysis
Concentrate or marijuana-infused product for inhalation	Potency analysis

(c) End products consisting of only one intermediate product that has not been changed in any way are not subject to potency analysis.

(3) No lot of usable flower, batch of marijuana concentrate, or batch of marijuana-infused product may be sold or transported until the completion and successful passage of quality assurance testing as required in this section, except:

(a) Business entities with multiple locations licensed under the same UBI number may transfer marijuana products between the licensed locations under the same UBI number prior to quality assurance testing; and

(b) Licensees may wholesale and transfer batches or lots of flower and other material that will be extracted and marijuana mix and nonsolvent extracts for the purposes of further extraction prior to completing required quality assurance testing. Licensees may wholesale and transfer failed lots or batches to be extracted pursuant to subsection (5) of this section.

(4) **Samples, lots, or batches that fail quality assurance testing.**

(a) Upon approval by the WSLCB, failed lots or batches may be used to create extracts. After processing, the extract must pass all quality assurance tests required in this section before it may be sold.

(b) **Retesting.** At the request of the producer or processor, the WSLCB may authorize a retest to validate a failed test result on a case-by-case basis. All costs of the retest will be borne by the producer or the processor requesting the retest. Potency retesting will generally not be authorized.

(c) **Remediation.** Producers and processors may remediate failed harvests, lots, or batches so long as the remediation method does not impart any toxic or deleterious substance to the usable marijuana, marijuana concentrates, or marijuana-infused product. Remediation solvents or methods used on the marijuana product must be disclosed to a licensed processor the producer or producer/processor transfers the products to; a licensed retailer carrying marijuana products derived from the remediated harvest, lot, or batch; or consumer upon request. The entire harvest, lot, or batch the failed sample(s) were deducted from must be remediated using the same remediation technique. No remediated harvest, lots or batches may be sold or transported until the completion and successful passage of quality assurance testing as required in this section.

(5) **Referencing.** Certified labs may reference samples for mycotoxin, heavy metals, and pesticides testing to other certified labs by subcontracting for those fields of testing. Labs must record all referencing to other labs on a chain-of-custody manifest that includes, but is not limited to, the following information: Lab name, certification number, transfer date, address, contact information, delivery personnel, sample ID numbers, field of testing, receiving personnel.

~~(6) Certified labs are not limited in the amount of usable marijuana and marijuana products they may have on their premises at any given time, but a certified lab must have records proving all marijuana and marijuana-infused products in the certified lab's possession are held only for the testing purposes described in this section.~~

~~(7) Upon the request of the WSLCB or its designee, a licensee or a certified lab must provide an employee of the WSLCB or their designee samples of marijuana or marijuana products or samples of the growing medium, soil amendments, fertilizers, crop production aids, pesticides, or water for random compliance checks. Samples may be screened for pesticides and chemical residues, unsafe levels of heavy metals, and used for other quality assurance tests deemed necessary by the WSLCB.~~)) (1) **Lab certification and accreditation for quality control testing.** To become certified, a third-party lab must meet the board's certification and accreditation requirements as described in WAC 314-55-0995 and this chapter before conducting quality control tests required under this section.

(a) Certified labs must be certified to conduct the following fields of testing:

(i) Water activity;

(ii) Potency analysis;

(iii) Foreign matter inspection;

(iv) Microbiological screening;

(v) Mycotoxin screening;

(vi) Pesticide screening; and

(vii) Residual solvent screening.

(b) Certified labs may be certified for heavy metal testing. Certified labs must comply with the guidelines for each quality control field of testing described in this chapter if they offer that testing service.

(c) Certified labs may reference samples for mycotoxin, heavy metal, or pesticide testing by subcontracting for those fields of testing.

(2) **General quality control testing requirements for certified labs.**

(a) Certified labs must record an acknowledgment of the receipt of samples from producers or processors. Certified labs must also verify if any unused portion of the sample is destroyed after the completion of required testing.

(b) Certified labs must report quality control test results directly to the board in the required format.

(c) Product must not be converted, transferred, or sold by the licensee until the required tests are reported to the board and the licensee.

(d) Certified labs must fail a sample if the results for any limit test are above allowable levels regardless of whether the limit test is required in the testing tables in this chapter.

(e) Certified labs must test samples on an "as is" or "as received" basis.

(f) For the purposes of this section, limits have been written to the number of significant digits that laboratories are expected to use when reporting to the board and on associated certificates of analysis.

(3) **Quality control analysis and screening.** The following analysis and screening are only required for samples that have not been previously tested, or that have failed quality control testing.

(a) **Potency analysis.**

(i) Certified labs must test and report the following cannabinoids to the board when testing for potency:

(A)

Cannabinoid	Lower Limit of Quantitation (mg/g)	CAS #
CBD	1.0	13956-29-1
CBDA	1.0	1244-58-2
Δ^9-THC	1.0	1972-08-3
Δ^9-THCA	1.0	23978-85-0

(B) Total THC;

(C) Total CBD.

(ii) Calculating total THC and total CBD.

(A) Total THC must be calculated as follows, where M is the mass or mass fraction of delta-9 THC or delta-9 THCA: M total delta-9 THC = M delta-9 THC + (0.877 × M delta-9 THCA).

(B) Total CBD must be calculated as follows, where M is the mass or mass fraction of CBD and CBDA: M total CBD = M CBD + (0.877 × M CBDA).

(iii) Regardless of analytical equipment or methodology, certified labs must accurately measure and report the acidic (THCA and CBDA) and neutral (THC and CBD) forms of the cannabinoids.

(b) **Water activity testing.** The sample fails quality control testing for water activity if the results exceed the following limits:

(i) Water activity rate of more than 0.65 a_w for useable marijuana;

(ii) Water activity rate of more than 0.85 a_w for solid edible products.

(c) **Foreign matter screening.** The sample fails quality control testing for foreign matter screening if the results exceed the following limits:

(i) Five percent of stems 3 mm or more in diameter; or

(ii) Two percent of seeds or other foreign matter; or

(iii) One insect fragment, one hair, or one mammalian excreta in sample.

(d) **Microbiological screening.** The sample and the related population fails quality control testing for microbiological screening if the results exceed the following limits:

Unprocessed Plant Material	Colony Forming Unit per Gram (CFU/g)
Bile Tolerant Gram Negative bacteria (BTGN)	$1.0 * 10^4$
Shiga toxin-producing Escherichia coli (STEC)	≤1
Salmonella spp.	≤1

Processed Plant Material	Colony Forming Unit per Gram (CFU/g)
Bile Tolerant Gram Negative bacteria (BTGN)	$1.0 * 10^3$
Shiga toxin-producing Escherichia coli (STEC)	≤1
Salmonella spp.	≤1

(e) **Mycotoxin screening.** The sample and the related population fails quality control testing if the results exceed the following limits:

Mycotoxin	µg/kg	CAS #
Aflatoxins (Sum of Isomers)	20.	
• Aflatoxin B1		1162-65-8
• Aflatoxin B2		7220-81-7
• Aflatoxin G1		1165-39-5
• Aflatoxin G2		7241-98-7
Ochratoxin A	20.	303-47-9

(f) **Residual solvent screening.** Except as otherwise provided in this subsection, a sample and the related population fails quality control testing for residual solvents if the results exceed the limits provided in the table below. Residual solvent results of more than 5,000 ppm for class three solvents, 50 ppm for class two solvents, and 2 ppm for any class one solvents as defined in *United States Pharmacopoeia USP 30 Chemical Tests / <467> - Residual Solvents (USP <467>)* not listed in the table below fail quality control testing. When residual solvent screening is required, certified labs must test for the solvents listed in the table below at a minimum.

Solvent	µg/g	ppm (simplified)	CAS #
Acetone	$5.0 * 10^3$	5000	67-64-1
Benzene	2.0	2	71-43-2
Butanes (Sum of Isomers)	$5.0 * 10^3$	5000	
• n-butane			106-97-8
• 2-methylpropane (isobutane)			75-28-5
Cyclohexane	$3.9 * 10^3$	3880	110-82-7
Chloroform	2.0	2	67-66-3
Dichloromethane	$6.0 * 10^2$	600	75-09-2
Ethanol	$5.0 * 10^3$	5000	64-17-5
Ethyl acetate	$5.0 * 10^3$	5000	141-78-6
Heptanes (Single Isomer)	$5.0 * 10^3$	5000	
• n-heptane			142-82-5
Hexanes (Sum of Isomers)	$2.9 * 10^2$	290	
• n-hexane			110-54-3
• 2-methylpentane			107-83-5
• 3-methylpentane			96-14-0
• 2,2-dimethylbutane			75-83-2
• 2,3-dimethylbutane			79-29-8
Isopropanol (2-propanol)	$5.0 * 10^3$	5000	67-63-0
Methanol	$3.0 * 10^3$	3000	67-56-1
Pentanes (Sum of Isomers)	$5.0 * 10^3$	5000	
• n-pentane			109-66-0
• methylbutane (isopentane)			78-78-4
• dimethylpropane (neopentane)			463-82-1
Propane	$5.0 * 10^3$	5000	74-98-6

Solvent	µg/g	ppm (simplified)	CAS #
Toluene	$8.9 * 10^2$	890	108-88-3
Xylenes (Sum of Isomers)	$2.2 * 10^3$	2170	
• 1,2-dimethylbenzene (ortho-)			95-47-6
• 1,3-dimethylbenzene (meta-)			108-38-3
• 1,4-dimethylbenzene (para-)			106-42-3

(g) **Heavy metal screening.** Heavy metal screening is required for all DOH compliant product as described in chapter 246-70 WAC. Heavy metal screening is optional for non-DOH compliant product; however, heavy metal limits provided below apply to all products. Any product exceeding the provided limits is subject to recall and destruction. The board may conduct random or investigation driven heavy metal screening for compliance. A sample and related quantity of product fail quality control testing for heavy metals if the results exceed the limits provided in the table below.

Metal	µg/g
Arsenic	2.0
Cadmium	0.82
Lead	1.2
Mercury	0.40

(h) **Pesticide screening.** For purposes of pesticide screening, a sample and the related quantity of marijuana is considered to have passed if it meets the standards described in WAC 314-55-108 and applicable department of agriculture rules.

(4) **Required quality control tests.** The following quality control tests are required for each of the marijuana products described below. Licensees and certified labs may opt to perform additional quality control tests on the same sample.

(a) **Marijuana flower.** Marijuana flower requires the following quality control tests:

Product	Test(s) Required
Marijuana flower	1. Water activity testing 2. Potency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening 6. Pesticide screening

(b) If marijuana flower will be sold as useable flower, no further testing is required.

(c) **Intermediate products.** Intermediate products must meet the following requirements related to quality control testing:

(i) All intermediate products must be homogenized prior to quality assurance testing;

(ii) For the purposes of this section, a batch is defined as a single run through the extraction or infusion process;

(iii) Marijuana mix must be chopped or ground so no particles are greater than 3 mm; and

(iv) Intermediate products require the following quality assurance tests:

Intermediate Product Type	Tests Required
Marijuana mix	1. Water activity testing 2. Potency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening 6. Pesticide screening
Concentrate or extract made with hydrocarbons (solvent based made using n-butane, isobutane, propane, heptane, or other solvents or gases approved by the board of at least 99% purity)	1. Potency analysis 2. Mycotoxin screening 3. Residual solvent test 4. Pesticide screening
Concentrate or extract made with a CO_2 extractor like hash oil	1. Potency analysis 2. Mycotoxin screening 3. Residual solvent test 4. Pesticide screening
Concentrate or extract made with ethanol	1. Potency analysis 2. Mycotoxin screening 3. Residual solvent test 4. Pesticide screening
Concentrate or extract made with approved food grade solvent	1. Potency analysis 2. Microbiological screening 3. Mycotoxin screening 4. Residual solvent test 5. Pesticide screening
Concentrate or extract (nonsolvent) such as kief, hash, rosin, or bubble hash	1. Potency analysis 2. Microbiological screening 3. Mycotoxin screening 4. Pesticide screening
Infused cooking oil or fat in solid form	1. Potency analysis 2. Microbiological screening 3. Mycotoxin screening 4. Pesticide screening

(d) **End products.** All marijuana, marijuana-infused products, marijuana concentrates, marijuana mix packaged, and marijuana mix infused sold from a processor to a retailer require the following quality assurance tests:

End Product Type	Tests Required
Infused solid edible	1. Potency analysis 2. Water activity testing
Infused liquid (like a soda or tonic)	1. Potency analysis
Infused topical	1. Potency analysis
Marijuana mix packaged (loose or rolled)	1. Potency analysis
Marijuana mix infused (loose or rolled)	1. Potency analysis
Concentrate or marijuana-infused product for inhalation	1. Potency analysis

(e) End products consisting of only one intermediate product that has not been changed in any way are not subject to potency analysis.

(5) Useable flower, a batch of marijuana concentrate, or a batch of marijuana-infused product may not be sold until the completion and successful passage of required quality control testing, except:

(a) Licensees may wholesale and transfer batches or quantities of marijuana flower and other material that will be extracted, and marijuana mix and nonsolvent extracts, for the purposes of further extraction prior to completing required quality control testing.

(b) Business entities with multiple locations licensed under the same UBI number may transfer marijuana products between the licensed locations under the same UBI number prior to quality control testing.

(c) Licensees may wholesale and transfer failed batches or quantities of marijuana flower to be extracted pursuant to subsection (6) of this section, unless failed for tests that require immediate destruction.

(6) **Failed test samples.**

(a) Upon approval by the board, failed quantities of marijuana or batches may be used to create extracts. After processing, the extract must pass all quality control tests required in this section before it may be sold, unless failed for tests that require immediate destruction.

(b) Retesting. A producer or processor must request retesting. The board may authorize the retest to validate a failed test result on a case-by-case basis. The producer or the processor requesting the retest must pay for the cost of all retesting.

(c) Remediation. Remediation is a process or technique applied to quantities of marijuana flower, lots, or batches. Remediation may occur after the first failure, depending on the failure, or if a retest process results in a second failure. Pesticide failures may not be remediated.

(i) Producers and processors may remediate failed marijuana flower, lots, or batches so long as the remediation method does not impart any toxic or harmful substance to the useable marijuana, marijuana concentrates, or marijuana-infused product. Remediation solvents or methods used on the marijuana product must be disclosed to:

(A) A licensed processor;

(B) The producer or producer/processor who transfers the marijuana products;

(C) A licensed retailer carrying marijuana products derived from the remediated marijuana flower, lot, or batch; or

(D) The consumer upon request.

(ii) The entire quantity of marijuana from which the failed sample(s) were deducted must be remediated.

(iii) No remediated quantity of marijuana may be sold or transported until quality control testing consistent with the requirements of this section is completed.

(iv) If a failed quantity of remediated marijuana is not remediated or reprocessed in any way after a first failure, it cannot be retested. Any subsequent certificates of analysis produced without remediation or reprocessing of the failed quantity of marijuana will not supersede the original compliance testing certificate of analysis.

(7) **Referencing.** Certified labs may reference samples for mycotoxins, heavy metals, and pesticides testing to other certified labs by subcontracting for those fields of testing. Labs must record all referencing to other labs on a chain-of-custody manifest that includes, but is not limited to, the following information: Lab name, certification number, transfer date, address, contact information, de-

livery personnel, sample ID numbers, field of testing, and receiving personnel.

(8) Certified labs are not limited in the amount of useable marijuana and marijuana products they may have on their premises at any given time, but a certified lab must have records proving all marijuana and marijuana-infused products in the certified lab's possession are held only for the testing purposes described in this chapter.

(9) A certificate of analysis issued by a certified lab for any marijuana product subject to the requirements of this chapter that has not already been transferred to a retail location expires 12 calendar months after issuance.

(10) The board, or its designee, may request that a licensee or a certified lab provide an employee of the board or their designee samples of marijuana or marijuana products, or samples of the growing medium, soil amendments, fertilizers, crop production aids, pesticides, or water for random or investigatory compliance checks. Samples may be randomly screened and used for other quality control tests deemed necessary by the board.

AMENDATORY SECTION (Amending WSR 17-12-032, filed 5/31/17, effective 8/31/17)

WAC 314-55-1025 Proficiency testing. (1) For the purposes of this ((~~section~~)) chapter, the following definitions apply:

(a) "Field of testing" means the categories of subject matter the laboratory tests, such as pesticide, microbial, potency, residual solvent, heavy metal, mycotoxin, foreign matter, and moisture content detection.

(b) "Proficiency testing (PT)" means the analysis of samples by a laboratory obtained from providers where the composition of the sample is unknown to the laboratory performing the analysis and the results of the analysis are used in part to evaluate the laboratory's ability to produce precise and accurate results.

(c) "Proficiency testing (PT) program" means an operation offered by a provider to detect a laboratory's ability to produce valid results for a given field of testing.

(d) "Provider" means a third-party company, organization, or entity not associated with certified laboratories or a laboratory seeking certification that operates an approved PT program and provides samples for use in PT testing.

(e) "Vendor" means an organization(s) approved by the ((~~WSLCB~~)) board to certify laboratories for marijuana testing, approve PT programs, and perform on-site assessments of laboratories.

(2) The ((~~WSLCB~~)) board or its vendor determines the sufficiency of PTs and maintains a list of approved PT programs. Laboratories may request authorization to conduct PT through other PT programs but must obtain approval for the PT program from ((~~WSLCB or WSLCB's~~)) the board or the board's vendor prior to conducting PT. The ((~~WSLCB~~)) board may add the newly approved PT program to the list of approved PT programs as appropriate.

(3) As a condition of certification, laboratories must participate in PT and achieve a passing score for each field of testing for which the lab will be or is certified.

(4) A laboratory must successfully complete a minimum of one round of PT for each field of testing the lab seeks to be certified for and provide proof of the successful PT results prior to initial certification.

(5)(a) A certified laboratory must participate in a minimum of two rounds of PT per year for each field of testing to maintain its certification.

(b) To maintain certification, the laboratory must achieve a passing score, on an ongoing basis, in a minimum of two out of three successive rounds of PT. At least one of the scores must be from a round of PT that occurs within six months prior to the laboratory's certification renewal date.

(6) If the laboratory fails to achieve a passing score on at least ((~~eighty~~)) 80 percent of the analytes in any proficiency test, the test is considered a failure. If the PT provider provides a pass/fail on a per analyte basis but not on the overall round of PT the lab participates in, the pass/fail evaluation for each analyte will be used to evaluate whether the lab passed ((~~eighty~~)) 80 percent of the analytes. If the PT provider does not provide individual acceptance criteria for each analyte, the following criteria will be applied to determine whether the lab achieves a passing score for the round of PT:

(a) +/- 30% recovery from the reference value for residual solvent testing; or

(b) +/- 3 z or 3 standard deviations from the reference value for all other fields of testing.

(7) If a laboratory fails a round of PT or reports a false negative on a micro PT, the laboratory must investigate the root cause of the laboratory's performance and establish a corrective action report for each unsatisfactory analytical result. The corrective action report must be kept and maintained by the laboratory for a period of three years, available for review during an on-site assessment or inspection, and provided to the ((~~WSLCB or WSLCB's~~)) board or the board's vendor upon request.

(8) Laboratories are responsible for obtaining PT samples from vendors approved by ((~~WSLCB or WSLCB's~~)) the board or the board's vendor. Laboratories are responsible for all costs associated with obtaining PT samples and rounds of PT.

(9) The laboratory must manage, analyze and report all PT samples in the same manner as customer samples including, but not limited to, adhering to the same sample tracking, sample preparation, analysis methods, standard operating procedures, calibrations, quality control, and acceptance criteria used in testing customer samples.

(10) The laboratory must authorize the PT provider to release all results ((~~used for certification and/or remediation of failed studies to WSLCB or WSLCB's~~)) at the same time, whether pass or fail, to the laboratory and the board, or the board's vendor.

(11) The ((~~WSLCB~~)) board may require the laboratory to submit raw data and all photographs of plated materials along with the report of analysis of PT samples. The laboratory must keep and maintain all raw data and all photographs of plated materials from PT for a period of three years.

(12) The ((~~WSLCB~~)) board may waive proficiency tests for certain fields of testing if PT samples or PT programs are not readily available or for other valid reasons as determined by ((~~WSLCB~~)) the board.

(13)(a) The ((~~WSLCB~~)) board will suspend a laboratory's certification if the laboratory fails to maintain a passing score on an ongo-

ing basis in two out of three successive PT studies. The ((~~WSLCB~~)) board may reinstate a laboratory's suspended certification if the laboratory successfully analyzes PT samples from ((~~a WSLCB or WSLCB's~~)) the board or the board's vendor approved PT provider, so long as the supplemental PT studies are performed at least ((~~fifteen~~)) 15 days apart from the analysis date of one PT study to the analysis date of another PT study.

(b) The ((~~WSLCB~~)) board will suspend a laboratory's certification if the laboratory fails two consecutive rounds of PT. ((~~WSLCB~~)) The board may reinstate a laboratory's suspended certification once the laboratory conducts an investigation, provides the ((~~WSLCB~~)) board a deficiency report identifying the root cause of the failed PT, and successfully analyzes PT samples from a ((~~WSLCB or WSLCB's~~)) board or board's vendor approved PT provider. The supplemental PT studies must be performed at least ((~~fifteen~~)) 15 days apart from the analysis date of one PT study to the analysis date of another PT study.

(14) If a laboratory fails to remediate and have its certification reinstated under subsection (13)(a) or (b) of this section within six months of the suspension, the laboratory must reapply for certification as if the laboratory was never certified previously.

(15) A laboratory that has its certification suspended or revoked under this section may request an administrative hearing to contest the suspension as provided in chapter 34.05 RCW.

Small Business Economic Impact Statement

Chapter 314-55
Rules Concerning Marijuana Quality Assurance
and Quality Control Testing

December 8, 2021

IEc

Cannabis Quality Assurance Testing and Pesticide Screening Proposed Rule

Small Business Economic Impact Statement

Final Report | November 16, 2021

prepared for:

Washington State Liquor and Cannabis Board
1025 Union Avenue SE
Olympia, WA 98504

prepared by:

Industrial Economics, Incorporated
2067 Massachusetts Avenue
Cambridge, MA 02140
617/354-0074

INDUSTRIAL ECONOMICS, INCORPORATED

TABLE OF CONTENTS

LIST OF ACRONYMS AND ABBREVIATIONS

DOH	Washington State Department of Health
ESD	Washington State Employment Security Department
NAICS	North American Industry Classification System
ORIA	Office of Regulatory Innovation and Assistance
RCW	Revised Code of Washington
RFA	Regulatory Fairness Act
SBEIS	Small Business Economic Impact Statement
WAC	Washington Administrative Code
WSLCB	Washington State Liquor and Cannabis Board

EXECUTIVE SUMMARY

This report evaluates the costs for businesses required to comply with the Washington State Liquor and Cannabis Board (WSLCB)'s proposed rule related to changes in quality assurance testing for recreational marijuana. This Small Business Economic Impact Statement (SBEIS) was developed to determine whether the proposed rule would result in more than minor costs to small businesses, and whether it would have a disproportionate cost impact on small businesses. The primary sources of information for this analysis include data reported by licensed businesses to WSLCB through the Leaf Data Systems traceability system and information gathered through outreach to businesses in the industry and knowledgeable subject matter experts.

Any licensed business producing marijuana flower and/or intermediate products for which existing regulations require testing would incur costs under the proposed rule. As of July 2021, there were 1,306 licensed marijuana producers and processers in the State of Washington.[1] Of those businesses, 99.3 percent are considered small.[2]

The proposed rule requirements most likely to result in costs to businesses are:

- **Addition of Pesticide Testing,** which would result in businesses needing to pay the cost of pesticides testing beyond the existing testing costs;
- **Change in number of one-gram flower samples required,** which would increase if a business is testing less than 5 pounds of flower at a time, resulting in lost revenues as additional flower is diverted to testing; and
- **Addition of random or investigation-driven heavy metal screening,** which may result in costs of pre-emptive, voluntary heavy metals testing for businesses that voluntarily conduct some heavy metals testing to ensure compliance with existing heavy metals limits.

This analysis considers whether the costs of the rule would result in more than minor costs to small businesses, defined as costs exceeding 0.3 percent of annual revenues. It evaluates the costs of the proposed rule to three types of businesses within the industry: those that test flowers only, those that test only intermediate products, and those that test both flowers and intermediate products.

[1] Email communications from WSLCB to IEc, August 24, 2021. Licensed businesses include holders of three license types – Producer, Processor, and Producer/Processor. This report refers to this group of businesses collectively as "producers and processors".

[2] Number of large businesses provided by the Employment Security Division (ESD) via email on September 20, 2021.

As summarized in Exhibit ES-1, on average, this rule is likely to impose more than minor costs on all three types of businesses in the industry. A significant majority (72 percent) of businesses in the regulated industry would experience more than minor costs as a result of the proposed rule. For businesses testing only flower, the weighted average annual costs of the rule as a percentage of average revenue are between 0.7 percent and 1.6 percent, exceeding the minor cost threshold of 0.3 percent. For businesses testing intermediate products only, the weighted average annual cost of the rule as a percentage of average revenue is between 0.4 percent and 0.9 percent. Producer/Processor businesses that test both flower and intermediate products may anticipate a weighted average annual cost ranging from 0.9 percent to 2.1 percent. It is important to note that the rule provision that provides the ability for license holders to test larger amounts of flower with a single panel of 502 tests and a single pesticide test would reduce these estimated costs.

Given that the regulated businesses in this industry are small (more than 99 percent of them), the rule is found to disproportionately impact small businesses. This SBEIS accordingly identifies and documents cost mitigation strategies.

EXHIBIT ES-1. WEIGHTED AVERAGE ANNUAL RULE COSTS, REVENUES, AND COSTS AS A PERCENTAGE OF REVENUES (2020$)

BUSINESS TYPE	WEIGHTED AVERAGE ANNUAL REVENUES	WEIGHTED AVERAGE ANNUAL TOTAL COSTS (LOW)	WEIGHTED AVERAGE ANNUAL TOTAL COSTS (HIGH)	COST AS PERCENT OF REVENUE (LOW)	COST AS PERCENT OF REVENUE (HIGH)
Testing Flowers Only	$227,660	$1,616	$3,635	0.7%	1.6%
Testing Intermediate Product Only	$1,329,917	$4,916	$12,290	0.4%	0.9%
Testing Flowers and Intermediate Product	$1,190,508	$10,326	$24,436	0.9%	2.1%
All Businesses	**$1,038,275**	**$7,625**	**$18,140**	**0.7%**	**1.7%**

Sources:
Average annual revenue data extracted from Leaf Data System by LCB, October 2021.
Annual number of tests for flower and/or intermediate products by license holder from 2018 through 2020 provided from Leaf System by WSLCB on October 22, 2021.
Cost of pesticide test based on interviews with producers and processors, September 2021; results of industry survey conducted by WSLCB in September/October 2021; and online research into testing prices posted on laboratory websites (October 2021).
Value of 1 gram of marijuana flower based on interviews with producers and processors, September 2021; and results of industry survey conducted by WSLCB in September/October 2021.

CHAPTER 1 | INTRODUCTION

This report evaluates the costs for businesses required to comply with a proposed rule by the Washington State Liquor and Cannabis Board (WSLCB) related to changes in quality assurance testing for recreational marijuana in the State of Washington. This Small Business Economic Impact Statement (SBEIS) was developed in accordance with the Regulatory Fairness Act (RFA), Revised Code of Washington (RCW) Section 19.85 to determine whether the proposed rule would have a disproportionate cost impact on small businesses. The primary sources of information for this analysis include data reported by licensed businesses to WSLCB through the Leaf Data Systems traceability system and information gathered through outreach to businesses in the industry and knowledgeable subject matter experts.

1.1 NEED FOR THE RULE

In 2018, the WSLCB was approached by industry partners, including stakeholders, medical marijuana patients, marijuana business owners, and other interested parties, to require producers and processors to test recreational marijuana crops for pesticides and heavy metals. These partners asserted that such a move, already adopted in other states, would inspire confidence among consumers, increase access to products meeting the health and safety needs of all Washingtonians, and bolster sales. The proposed rule is anticipated to increase testing efficiencies, safety, and quality for all marijuana products produced and sold in Washington State.

1.2 SUMMARY OF THE PROPOSED RULE

WSLCB is proposing changes to specific sections of chapter 314-55 of the Washington Administrative Code (WAC) regarding quality assurance testing and product requirements for recreational marijuana. Exhibit 1-1 summarizes the relevant existing regulations, identifies how they would change under the proposed rule, and describes how the change would result in costs to affected businesses.

Under the existing regulations, licensed producers and processors must test every five-pound lot of flower and/or batch of intermediate cannabis product for a series of parameters referred to here as the Initiative-502 panel of tests, or "the I-502 panel of tests". The required tests for marijuana flower include:

- Moisture content;
- Potency analysis;

- Foreign matter inspection;
- Microbial screening; and
- Mycotoxin

The existing regulations further stipulate that for every five-pound lot of flower required to be tested, the producer must submit four, one-gram samples.

The required tests for intermediate products such as marijuana mix, concentrates and extracts, and infused cooking oils and fats differ depending on the specific product, but include some subset of the above-listed tests required for flower.

Finally, existing regulations identify limits for levels of certain heavy metals in marijuana flower and intermediate products, but they do not require heavy metals testing. The regulations do, however, confirm that upon request by WSLCB or its designee, licensees must provide samples of marijuana products or other related materials to be screened for pesticides, chemical residues, unsafe levels of heavy metals, or other quality assurance tests as deemed necessary by WSLCB.

The proposed rule includes the following provisions:

1. **Addition of Pesticide Testing:** Addition of pesticide testing to the I-502 panel of tests required for marijuana flower to be sold for retail, and for intermediate products;
2. **Change in number of one-gram flower samples required:** Changes in the required number of one-gram samples that must be submitted for each I-502 panel of tests. For amounts of marijuana up to 10 pounds, a minimum of eight, one-gram samples must be taken (i.e., an increase in the number of one-gram samples required for amounts of flower 5 pounds or less from four to eight). For other flower amounts up to 50 pounds, the number of one-gram samples required per pound of tested product would be decreased compared to existing requirements[3];
3. **Addition of random or investigation-driven heavy metal screening:** Confirmation that existing heavy metal limits apply to all marijuana products, and identification that WSLCB may conduct random or investigation-driven heavy metal screening to ensure compliance with these limits; and
4. **Increase in maximum amount of marijuana flower that may be represented by a single I-502 panel of tests:** Revision of the amount of marijuana flower that may be represented by a single I-502 panel of tests from one per five-pound lot to one per a given amount of a single strain of marijuana up to 50 pounds.

While the proposed rule consists of a variety of changes to WAC 314-55-101 and WAC 314-55-102, the requirements determined most likely to result in costs to businesses are

[3] The proposed rule includes the following required number of one-gram samples per amount of flower to be tested: flower amounts >10 lbs but <20 lbd (12 samples); >20 lbs but <30 lbs (15 samples); >30 lbs but <40 lbs (18 samples); and >40 lbs but <50 lbs (19 samples).

the first three described above: the addition of testing requirements for pesticides, which would result in businesses needing to pay the cost of pesticides testing beyond the existing testing costs; the change in the number of one-gram samples required for each panel of I-502 tests, which would increase if a business is testing less than 5 pounds of flower at a time, resulting in lost revenues as additional flower diverted to testing; and the cost of pre-emptive, voluntary heavy metals testing induced by the proposed rule, which may result in costs of heavy metals testing for businesses that voluntarily conduct heavy metals testing to some extent to ensure compliance with existing heavy metals limits. Therefore, these proposed testing requirements are the focus of this analysis of potential impacts on small businesses. The increase in the maximum amount of marijuana flower that may be tested with a single I-502 panel of tests would not increase costs to businesses, but instead would decrease costs for some businesses that would be able to test larger amounts of flower with the same number of I-502 test panels, reducing existing testing costs.

EXHIBIT 1-1. SUMMARY OF EXISTING REGULATIONS AND PROPOSED RULE CHANGES

TOPIC	EXISTING REGULATION	PROPOSED RULE	COST IMPLICATION
MARIJUANA FLOWER			
Required Tests	1. Moisture content 2. Potency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening	1. Moisture content 2. Potency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening 6. Pesticide screening	Costs to add pesticides testing to the panel of tests.
Number of One-Gram Samples	Four, one-gram samples of flower per five-pound lot of flower.	Flower amounts up to 10 lbs (8 samples); >10 lbs but <20 lbs (12 samples); >20 lbs but <30 lbs (15 samples); >30 lbs but <40 lbs (18 samples); and >40 lbs but <50 lbs (19 samples).	Businesses testing less than five pounds of flower would lose revenue from diverting additional flower for sample testing (increase in required one-gram samples from four to eight.
Heavy Metals Testing	Upon request by WSLCB or its designee, licensees must provide samples of marijuana products or other related materials to be screened for pesticides, chemical residues, unsafe levels of heavy metals, or other quality assurance tests as deemed necessary by WSLCB	WSLCB may conduct random or investigation driven heavy metal screening for compliance.	Uncertain - Costs may be incurred if proposed rule triggers some businesses to voluntarily conduct heavy metals testing.

TOPIC	EXISTING REGULATION	PROPOSED RULE	COST IMPLICATION
Amount of Flower Represented by a Single Panel of Tests	One five-pound lot.	Amounts of marijuana flower up to 50 lbs.	Potential cost savings - For businesses with amounts of flower > five pounds available for testing, fewer I-502 panels of tests would be required.
INTERMEDIATE PRODUCT			
Required Tests	Depending on product, some subset of the following tests: 1. Moisture content 2. Potency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening	All tests currently required (based on type of product), plus pesticide screening.	Costs to add pesticides testing to the panel of tests.
Heavy Metals Testing	Upon request by WSLCB or its designee, licensees must provide samples of marijuana products or other related materials to be screened for pesticides, chemical residues, unsafe levels of heavy metals, or other quality assurance tests as deemed necessary by WSLCB	WSLCB may conduct random or investigation driven heavy metal screening for compliance.	Uncertain - Costs may be incurred if proposed rule triggers some businesses to voluntarily conduct heavy metals testing.

1.3 REQUIREMENTS FOR THE SMALL BUSINESS ECONOMIC IMPACT STATEMENT

RCW 19.85 requires that the relevant agency prepare an SBEIS if the proposed rule "will impose more than minor costs on businesses in an industry."[4] "Minor cost" is defined in RCW 19.85.020 as a cost per business that is less than 0.3 percent of annual revenue or income, or $100, whichever is greater, or one percent of annual payroll.[5]

The guidelines for preparing an SBEIS are included in RCW 19.85.040.[6] We also utilize the more specific guidance and resources provided by Washington State's Office for

[4] RCW 19.85.030 Agency Rules – Small Business economic impact statement reduction of costs imposed by rule. Accessed September 20, 2021 at: https://app.leg.wa.gov/RCW/default.aspx?cite=19.85.030.

[5] RCW 19.85.020 Definitions. Accessed September 20, 2021 at: https://app.leg.wa.gov/rcw/default.aspx?cite=19.85.020.

[6] RCW 19.85.040 Small business economic impact statement—Purpose—Contents. Accessed September 20, 2021 at: https://app.leg.wa.gov/RCW/default.aspx?cite=19.85.040.

Regulatory Innovation and Assistance (ORIA).[7] Per the SBEIS *Frequently Asked Questions* guidance, agencies are required to consider "costs imposed on businesses and costs associated with compliance with the proposed rules". [8] Agencies are not required under RCW 19.85 to consider indirect costs not associated with compliance with the rule.

[7] ORIA. 2021. Regulatory Fairness Act Support. Accessed September 20, 2021 at: https://www.oria.wa.gov/site/alias__oria/934/regulatory-fairness-act-support.aspx.

[8] WA Attorney General Office. 2021. Small Business Economic Impact Statements – Frequently Asked Questions. Accessed September 20, 2021 at: https://www.oria.wa.gov/Portals/_oria/VersionedDocuments/RFA/Regulatory_Fairness_Act/DRAFT_SBEIS_FAQ.pdf.

CHAPTER 2 | SMALL BUSINESS IMPACTS

This chapter describes our analysis of potential economic impacts of the proposed rule on small businesses in Washington State. First, we identify the number of small businesses affected and the minor cost thresholds for the affected industry. We then present information on the estimated costs of compliance for these small businesses and compare those costs with the minor cost thresholds. Next, we discuss how the proposed rule disproportionately affects small businesses and describe the strategies considered to mitigate these effects. We then describe how small businesses are involved in the rule-making process. Finally, we discuss the estimated impact on employment.

2.1 SMALL BUSINESSES AFFECTED

As of July 2021, there were 1,306 licensed marijuana producers and processers in the State of Washington.[9] Of those businesses, nine employ more than 50 individuals, indicating that 99.3 percent of the businesses in this industry are considered small (Exhibit 2-1).[10] Any licensed business producing marijuana flower and/or intermediate products for which existing regulations require testing would incur costs under the proposed rule. Licensed business that are not currently operating, or that produce only flower marked for extraction or end-products would not be affected by this rule.

"Minor cost" is defined in RCW 19.85.020 as a cost per business that is less than 0.3 percent of annual revenue or income or one hundred dollars, whichever is greater, or one percent of annual payroll. As revenue information is more readily available than payroll, the analysis calculates minor cost thresholds based on revenues of business entities in the affected industries. The minor cost threshold is $3,466 (2020$) per business within the industry, based on the average annual revenues reported for calendar years 2018 through 2020 (WSLCB 2021) and the number of licensed producers and/or processors as of August 2021. To evaluate the impacts of the rule on different types and sizes of businesses within the industry, later sections of this analysis further break down the industry into different groups of affected businesses, and presents minor cost thresholds for those businesses specifically.

[9] Email communications from WSLCB to IEc, August 24, 2021. Licensed businesses include holders of three license types – Producer, Processor, and Producer/Processor. This report refers to this group of businesses collectively as "producers and processors".

[10] Number of large businesses provided by the Employment Security Division (ESD) via email on September 20, 2021.

EXHIBIT 2-1. MINOR COST THRESHOLD FOR AFFECTED INDUSTRIES

TYPE OF BUSINESS[1]	# OF BUSINESSES IN WASHINGTON[2]	PERCENTAGE OF BUSINESSES CONSIDERED SMALL[3]	AVERAGE ANNUAL REVENUES (2020$)[4]	MINOR COST THRESHOLD = 0.3% AVERAGE ANNUAL REVENUES (2020$)
Cannabis Producer and/or Processor	1,306	99.3%	$1,155,374	$3,466

Notes:

1. Relevant North American Industry Classification System (NAICS) codes for this industry include the following:
   111998 – All Other Miscellaneous Crop Farming, including Marijuana Grown in an Open Field
   111419 – Other Food Crops Grown Under Cover, including Marijuana Grown Under Cover
   115112 – Soil Preparation, Planting, and Cultivating
   325411 – Medicinal and Botanical Manufacturing
   311812 – Commercial Bakeries
   311991 - Perishable Food Manufacturing
   424590 – Other Farm Product Raw Material Merchant Wholesalers, including Marijuana Merchant wholesalers
2. Represents the total number of cannabis producer, producer/processor, and processor licenses as of July 2021 (Email communications from WSLCB August 24, 2021).
3. Number of businesses with >50 employees of all producer/processor license holders (9) provided by the Employment Security Division (ESD) via email on September 20, 2021.
4. Average annual revenues for all licensees that reported revenues between 2018 and 2020, provided by WSLCB on October 22, 2021.

2.2 COST OF COMPLIANCE

As described in Section 1-2 and Exhibit 1-1, complying with the proposed rule requires that both marijuana flower not destined for extraction and intermediate cannabis products (i.e., marijuana mix, concentrates, and infused cooking oil or fat in solid form) be tested for pesticides, in addition to the existing I-502 panel testing protocols. It further requires an increase in the number of one-gram samples that must be submitted for testing for amounts of flower up to five pounds. The proposed rule does not require heavy metals testing for marijuana flower or intermediate product. However, the proposed provision that WSLCB may conduct random or investigation-driven heavy metals testing may result in costs to the extent that license holders would choose to conduct heavy metals testing voluntarily to ensure compliance with existing heavy metals limits. This analysis quantifies these costs that may result from this rulemaking.

Other components of the proposed rule, including the reduction in the number of one-gram samples required to be submitted for I-502 testing for amounts of marijuana flower exceeding 10 pounds, and increases in the amount of a single strain of marijuana flower that may be tested with a single panel of I-502 tests, may ultimately reduce certain costs. The potential effects of these rule provisions are discussed qualitatively in the sections that follow.

This analysis relies on testing and revenue data reported by license holders to WSLCB's Leaf Data Systems,[11] information gathered through interviews conducted with affected businesses between September 3 and September 24, 2021 and the result of an industry survey implemented by WSLCB in September 2021 to describe and estimate the potential costs of the proposed rule.[12] Attachment A provides a list of individuals interviewed in the course of this analysis, and Attachment B includes the interview guide used in those discussions. Questions posed in the industry survey implemented by WSLCB to solicit information for this SBEIS appears in Attachment C.

2.2.1 ADDITION OF PESTICIDE TESTING

For producers and processors, each marijuana flower lot not marked for extraction, or batch of intermediate product (e.g., concentrate, extract, or oil) would require pesticide testing; this is not currently required within the existing I-502 panel of tests. The proposed rule does not alter the existing regulations at WAC 314-55-108, which dictate the types of pesticides that can be used in marijuana production or the "action levels" above which the marijuana lot or batch from which the sample was drawn would fail quality assurance testing. Given that marijuana producers are already subject to these limitations on the types and amount of pesticides that can be used in production, we do not anticipate that compliance with the pesticide screening requirement would require changes in growing operations to comply with these limits.[13]

During our interviews, producers and processors indicated that they would be unable to pass additional testing costs on to retailers in the form of higher prices and remain competitive.[14] However, of the 117 businesses that responded to the WSLCB survey of all license holders, 39 (33 percent) indicated they expected to pass some or all of their testing costs on to the buyers of their products.[15] This analysis assumes producers and processors bear the full cost of the testing and therefore that the testing requirements have a direct effect on operational costs. If producers and processors are able to pass on the costs of testing by increasing prices of product, some or all of this cost may be recouped.

Labs currently charge $70 to $150 per sample for pesticides testing.[16] Interviewees identified costs for pesticides tests alone ranging from as low as $20 to as high as $350,

[11] Leaf Data Systems is the traceability system used by WSLCB. It includes data submitted by license holders to allow WSLCB to track cannabis from point-of-origin to sale (WSLCB 2021).

[12] Section 2.6 provides a more detailed description of the outreach to affected businesses conducted to support this analysis.

[13] Results of interviews conducted with affected businesses between September 3 and September 24, 2021. No interviewees identified that the addition of pesticides testing would require any change in growing practices (e.g., types or amount of pesticides used in production).

[14] Based on interviews with a subset of producer/processors. Significant additional research would be required to confirm or refute this assumption. For example, research might include the identification or development of elasticity estimates for this evolving market, as well as information about current profit margins in this industry. This information, if available, could be used to determine which actors (producers or consumers) are most likely to bear the costs of the rule changes.

[15] Results of WSLCB survey of all marijuana producer and processor license holders conducted in September 2021.

[16] Online research from testing labs websites conducted in October 2021.

though most estimates were between $60 and $150.[17] Based on interviews with a subset of producers and processors and prices available from labs, we estimate the potential range of testing costs per sample to add pesticides screening; these costs are estimated to range from $60 to $150 per test.

Average Annual Costs per Business of Pesticides Testing

Quantifying per business annual costs of pesticides testing (as well as lost revenues associated with flower diverted for testing, discussed later) for producers and processors requires information on the number of lots and/or batches of flowers and intermediate products annually. It is difficult to generalize the average number of lots and batches tested, as business models vary greatly. For example, the number of lots or batches tested on an annual basis may vary based on factors such as the size of an operation or harvest, number of strains being grown by a single business entity, and testing choices in terms of batch/lot size (e.g., small producers may choose to test only once they have a five pound lot, or may test smaller lots of two to three pounds).

During WSLCB outreach to the industry over the course of rule development, in industry interviews, and through the WSCLB-led survey, affected license-holders stressed the importance of considering the wide diversity of businesses within the industry, and recognizing that not all businesses would be affected similarly. This analysis distinguishes three types of businesses that would experience pesticide-testing costs as a result of this rule:

- **Businesses testing flowers only.** These businesses would incur costs associated with pesticide testing for flowers, and lost revenue associated with increasing the amount of flower that must be diverted to testing.
- **Businesses testing intermediate products only**. These businesses would incur costs associated with pesticide testing for intermediate products.
- **Businesses testing both flowers and intermediate products.** These businesses would incur costs associated with pesticide testing for flowers, lost revenue associated with increasing the amount of flower that must be diverted to testing, and the cost of pesticide testing for intermediate products.

Within each of these groups, the cost per business is driven by the number of test panels on flower and/or intermediate products that business runs annually. The pesticide testing requirement would generate the need to integrate an additional test to each panel each time a business undertakes its existing testing requirements, as described in Exhibit 1-1 and in Section 1-2. That is, it adds a test to the existing panel of required tests. We therefore find that the requirement would not result in additional instances of testing within an average year but instead the numbers of tests undertaken with each testing instance. Given this, we assume businesses would continue to test product at the same frequency following implementation of the rule as they have in recent years. Specifically,

[17] Results of interviews conducted with affected businesses between September 3 and September 24, 2021.

we estimate the average annual frequency of testing for these businesses over the last three years (2018 through 2020).

WSLCB's Leaf Data Systems maintains information on the total number of flower and/or intermediate product tests implemented by each license holder annually between 2018 and 2021. Of the 1,305 license holders identified previously, 1,159 reported instances of required testing between 2018 and 2021. Because 2021 represents an incomplete year of data, we remove businesses that reported testing only in 2021 from the analysis (35 businesses, bins A, G, and M in Exhibit 2-2). Based upon the average number of flower tests (for businesses testing flower only), intermediate tests (for businesses testing only intermediate product) or total tests (for businesses testing both flowers and intermediate products) conducted by each business between 2018 and 2020, we distribute these businesses into bins based on how frequently they submit flower or intermediate products for testing (Exhibit 2-2). Within each bin, we further identify the median number of tests run across all businesses in each bin, which is used as the basis for estimating costs to each business.[18]

EXHIBIT 2-2. ANNUAL NUMBERS OF FLOWER AND/OR INTERMEDIATE PRODUCT TESTS RUN BY PRODUCERS AND PROCESSORS, 2018-2020

BIN	NUMBER OF BUSINESSES IN BIN	PERCENTILE	AVERAGE ANNUAL NUMBER OF TESTS PER BUSINESS (LOW END)	AVERAGE ANNUAL NUMBER OF TESTS PER BUSINESS (HIGH END)	MEDIAN NUMBER OF AVERAGE ANNUAL TESTS ACROSS BUSINESSES
BUSINESSES TESTING FLOWER ONLY (224 BUSINESSES)					
A[1]	14	0-1st	-	-	-
B	45	1st-25th	0.01	1.00	0.67
C	55	26th-50th	1.01	4.00	2.33
D	54	51st-75th	4.01	20.42	10.00
E	33	76th-90th	20.43	64.47	38.00
F	23	91th-100th	64.48	1,305.00	120.00
BUSINESSES TESTING INTERMEDIATE PRODUCTS ONLY (235 BUSINESSES)					
G[1]	12	0-1st	-	-	-
H	50	1st-25th	0.01	2.00	0.67
I	56	26th-50th	2.01	16.67	7.50
J	58	51st-75th	16.71	108.17	43.50
K	35	76th-90th	108.21	232.40	157.00
L	24	91st-100th	232.41	2,870.33	408.33

[18] Due to the presence of outliers within our data, particularly at the upper ends of the testing bins, we identify the median rather than the average as a better central tendency of the annual testing frequencies for businesses within each bin.

BIN	NUMBER OF BUSINESSES IN BIN	PERCENTILE	AVERAGE ANNUAL NUMBER OF TESTS PER BUSINESS (LOW END)	AVERAGE ANNUAL NUMBER OF TESTS PER BUSINESS (HIGH END)	MEDIAN NUMBER OF AVERAGE ANNUAL TESTS ACROSS BUSINESSES
BUSINESSES TESTING BOTH FLOWER AND INTERMEDIATE PRODUCTS (700 BUSINESSES)					
M[1]	9	0-1st	-	-	-
N	166	1st-25th	0.01	15.58	3.00
O	175	26th-50th	15.61	62.00	17.67
P	176	51st-75th	62.10	198.67	53.17
Q	104	76th-90th	198.71	497.13	148.00
R	70	91st-100th	497.14	6,492.33	351.00

Source: Annual number of tests for flower and/or intermediate products by license holder provided from Leaf Data Systems by WSLCB on October 22, 2021.

Note:

1. Businesses identified as having no tests were included in the provided data as reporting testing in 2021 but did not report testing in 2018-2020. Because 2021 represented an incomplete year of data, these businesses and their tests are excluded from the calculated averages.

For each of the bins described in Exhibit 2-2, we calculate the total costs of pesticide testing based on the median number of annual tests run across all businesses in that bin to estimate the costs of rule compliance.[19] We present these estimates in Exhibits 2-3 through 2-5. The costs of pesticide testing that would be incurred by affected businesses varies widely across the identified bins of businesses but is directly correlated with the number of tests a business conducts each year. Businesses with larger numbers of flower and intermediate product tests conducted annually would incur greater costs associated with pesticides testing. Attachment D provides a data dictionary for WSLCB use that documents the source of each data element used in the small business economic impact statement.

The cost estimates in Exhibits 2-3 through 2-5 are subject the following assumptions:

1. We assume the future rate of I-502 panel testing for flowers and/or intermediate product is similar to the average rate of testing over the years 2018-2020. If the rate of testing increases or decreases in the future, this analysis may under- or over-estimate costs associated with pesticides testing. However, we note that increased testing rates are likely also correlated with increased revenue (as they may be indicative of increased production from the business). Therefore, this assumption does not necessarily affect our estimated cost impact as a fraction of revenues.

[19] We rely on the median, rather than average number of tests run per businesses in each bin as more representative of the data which are not evenly distributed across the range, but include notable outliers at the higher end of each range.

2. Some producer/processors are already testing some portion of their products for pesticides for various reasons (e.g., already producing medically compliant products, consumer/retailer demand, and interest in clean products).[20] Of the 78 producer/processors who responded to a survey question asking if they presently conduct any pesticide testing on their flowers, 42 (54 percent) indicated that they do.[21] Five of the seven processors (71 percent) responding to the same question regarding intermediate products indicated they do test some portion of their products for pesticides. However, businesses interviewed that do currently conduct pesticide testing on their flower crops or other intermediate products indicated that testing is currently done less frequently (e.g., multiple strains per test, or intermittent research and development testing) compared to the frequency of the current I-502 panel of tests and with which pesticide testing would be done under the proposed rule (i.e., on a per-batch or per-lot by strain basis).[22] To the extent producers are already incurring pesticide testing costs for some of the tested flower lots and/or intermediate product batches identified, this estimate overstates the incremental compliance costs of the proposed rule on those businesses.

3. Prices that would be charged for pesticide testing once this test is required are uncertain. As more labs begin offering testing, pricing could become more competitive. Interviews previously conducted with testing labs indicate that labs had recently cut their prices for testing for the suite of quality assurance tests currently required under WAC 314-55-102.[23]

4. This estimate does not account for the potential offsetting benefit of businesses increasing the amount of flower that can be tested using a single pesticide test. We assume that producers and processors would continue test five-pound lots and that each five-pound lot tested would now also be tested for pesticides. To the extent that five-pound amounts currently tested individually may instead be consolidated into larger amounts that can be tested with a single pesticide test, fewer pesticide tests may be needed in the future, and the analysis thus overstates the cost of pesticide testing. Information collected during industry interviews and through the LCB-implemented survey indicate that many surveyed businesses would likely take advantage of testing higher amounts at once (e.g., ten pounds), which would reduce the number of pesticides tests required. The potential for businesses to move to testing larger amounts of flower in a single panel of I-502 tests is discussed in greater detail in Section 2.2.4.

[20] Results of interviews conducted with affected businesses between September 3 and September 24, 2021.

[21] Results of WSLCB survey of all marijuana producer and processor license holders conducted in September 2021.

[22] Interviews with Industry Representatives on September 3, 2021; September 13, 2021; September 15, 2021; and September 17,2021.

[23] Interviews conducted by IEc with cannabis testing labs in April 2019.

EXHIBIT 2-3. ESTIMATED ANNUAL COSTS OF COMPLIANCE FOR BUSINESSES TESTING FLOWERS ONLY (2020$)

BIN	AVERAGE ANNUAL REVENUES[3]	MINOR COST THRESHOLD	MEDIAN AVERAGE NUMBER OF ANNUAL TESTS ACROSS BUSINESSES	COST OF PESTICIDE TESTING (LOW END TESTING COST - $60)	COST OF PESTICIDE TESTING (HIGH END TESTING COST - $150)	LOST REVENUE ASSOCIATED WITH PRODUCT DIVERTED TO TESTING[2]	TOTAL COST (LOW END TESTING COST)	TOTAL COST (HIGH END TESTING COST)	COST AS A PROPORTION OF REVENUE (LOW)	COST AS A PROPORTION OF REVENUE (HIGH)
A[1]	$213,141	$639	-	$-	$-	$-	**$-**	**$-**	0.0%	0.0%
B	$95,558	$287	0.67	$40	$100	$8	**$48**	**$108**	0.1%	0.1%
C	$203,563	$611	2.33	$140	$350	$28	**$168**	**$378**	0.1%	0.2%
D	$112,403	$337	10.00	$600	$1,500	$120	**$720**	**$1,620**	0.6%	1.5%
E	$531,573	$1,595	38.00	$2,280	$5,700	$456	**$2,736**	**$6,156**	0.5%	1.2%
F	$378,294	$1,135	120.00	$7,200	$18,000	$1,440	**$8,640**	**$19,440**	2.3%	5.2%

Sources:
Average annual revenue data extracted from Leaf Data System by LCB, October 2021.
Annual number of tests for flower and/or intermediate products by license holder from 2018 through 2020 provided from Leaf System by WSLCB on October 22, 2021.
Cost of pesticide test based on interviews with producers and processors, September 2021; results of industry survey conducted by WSLCB in September/October 2021; and online research into testing prices posted on laboratory websites (October 2021).
Value of 1 gram of marijuana flower based on interviews with producers and processors, September 2021; and results of industry survey conducted by WSLCB in September/October 2021.

Notes:

1. Businesses identified as having no tests were included in the provided data as reporting testing in 2021 but did not report testing in 2018-2020. Because 2021 represented an incomplete year of data, these businesses and their tests are excluded from the calculated averages.
2. Lost revenue associated with product diverted to testing is equal to the total number of tests*the per gram value of the flower ($3)*the number of additional grams diverted per test lot/amount (4).
3. The average annual revenues reported by licensees are not necessarily linearly correlated with the number of tests run by the business. This may be due to a variety of factors including businesses collecting revenues on flower marked for extraction or end-products that are not required to be tested for the I-502 panel (i.e., that are not associated with tests reported in these data), flower and/or intermediate products being tested and sold in different calendar years, licenses that have moved locations resulting in testing being reported under one license number, but revenues being reported under another), splitting and merging of businesses and operations, and data reporting errors (Written communication from WSLCB to IEc on October 21, 2021).

Gray shading indicates rule cost estimates that exceed the minor cost threshold for that bin of businesses.

EXHIBIT 2-4. ESTIMATED ANNUAL COSTS OF COMPLIANCE FOR BUSINESSES TESTING INTERMEDIATE PRODUCTS ONLY (2020$)

BIN	AVERAGE ANNUAL REVENUES	MINOR COST THRESHOLD	MEDIAN AVERAGE NUMBER OF ANNUAL TESTS ACROSS BUSINESSES	COST OF PESTICIDE TESTING (LOW END TESTING COST - $60)	COST OF PESTICIDE TESTING (HIGH END TESTING COST - $150)	COST AS A PROPORTION OF REVENUE (LOW)	COST AS A PROPORTION OF REVENUE (HIGH)
G[1]	$75,117	$225	-	**$-**	**$-**	0.0%	0.0%
H	$179,612	$539	0.67	**$40**	**$101**	0.0%	0.1%
I	$299,963	$900	7.50	**$450**	**$1,125**	0.2%	0.4%
J	$832,412	$2,497	43.50	**$2,610**	**$6,525**	0.3%	0.8%
K	$2,003,151	$6,009	157.00	**$9,420**	**$23,550**	0.5%	1.2%
L	$6,350,122	$19,050	408.33	**$24,500**	**$61,250**	0.4%	1.0%

Sources:
Average annual revenue data extracted from Leaf Data System by LCB, October 2021.
Annual number of tests for flower and/or intermediate products by license holder from 2018 through 2020 provided from Leaf System by WSLCB on October 22, 2021.
Cost of pesticide test based on interviews with producers and processors, September 2021; results of industry survey conducted by WSLCB in September/October 2021; and online research into testing prices posted on laboratory websites (October 2021).

Note:
1. Businesses identified as having no tests were included in the provided data as reporting testing in 2021 but did not report testing in 2018-2020. Because 2021 represented an incomplete year of data, these businesses and their tests are excluded from the calculated averages.

Gray shading indicates rule cost estimates that exceed the minor cost threshold for that bin of businesses.

EXHIBIT 2-5. ESTIMATED ANNUAL COSTS OF COMPLIANCE FOR BUSINESSES TESTING BOTH FLOWERS AND INTERMEDIATE PRODUCTS (2020$)

BIN	AVERAGE ANNUAL REVENUES[3]	MINOR COST THRESHOLD	MEDIAN AVERAGE NUMBER OF ANNUAL TESTS ACROSS BUSINESSES	COST OF PESTICIDE TESTING (LOW END TESTING COST - $60)	COST OF PESTICIDE TESTING (HIGH END TESTING COST - $150)	MEDIAN AVERAGE NUMBER OF ANNUAL FLOWER TESTS ACROSS BUSINESSES	LOST REVENUE ASSOCIATED WITH PRODUCT DIVERTED TO TESTING[2]	TOTAL COST (LOW END TESTING COST)	TOTAL COST (HIGH END TESTING COST)	COST AS A PROPORTION OF REVENUE (LOW)	COST AS A PROPORTION OF REVENUE (HIGH)
M[1]	$180,776	$542	-	$-	$-	-	$-	**$-**	**$-**	0.0%	0.0%
N	$713,018	$2,139	6.70	$402	$1,005	3.00	$36	**$438**	**$1,041**	0.1%	0.1%
O	$260,983	$783	31.30	$1,878	$4,695	17.67	$212	**$2,090**	**$4,907**	0.8%	1.9%
P	$586,218	$1,759	107.20	$6,432	$16,080	53.17	$638	**$7,070**	**$16,718**	1.2%	2.9%
Q	$1,617,744	$4,853	295.00	$17,700	$44,250	148.00	$1,776	**$19,476**	**$46,026**	1.2%	2.9%
R	$5,531,265	$16,594	745.70	$44,742	$111,855	351.00	$4,212	**$48,954**	**$116,067**	0.9%	2.1%

Sources:
Average annual revenue data extracted from Leaf Data System by LCB, October 2021.
Annual number of tests for flower and/or intermediate products by license holder from 2018 through 2020 provided from Leaf System by WSLCB on October 22, 2021.
Cost of pesticide test based on interviews with producers and processors, September 2021; results of industry survey conducted by WSLCB in September/October 2021; and online research into testing prices posted on laboratory websites (October 2021).
Value of 1 gram of marijuana flower based on interviews with producers and processors, September 2021; and results of industry survey conducted by WSLCB in September/October 2021.

Notes:

1. Businesses identified as having no tests were included in the provided data as reporting testing in 2021 but did not report testing in 2018-2020. Because 2021 represented an incomplete year of data, these businesses and their tests are excluded from the calculated averages.
2. Lost revenue associated with product diverted to testing is equal to the total number of tests*the per gram value of the flower ($3)*the number of additional grams diverted per test lot/amount (4).
3. The average annual revenues reported by licensees are not necessarily linearly correlated with the number of tests run by the business. This may be due to a variety of factors including businesses collecting revenues on flower marked for extraction or end-products that are not required to be tested for the I-502 panel (i.e., that are not associated with tests reported in these data), flower and/or intermediate products being tested and sold in different calendar years, licenses that have moved locations resulting in testing being reported under one license number, but revenues being reported under another), splitting and merging of businesses and operations, and data reporting errors (Written communication from WSLCB to IEc on October 21, 2021).

Gray shading indicates rule cost estimates that exceed the minor cost threshold for that bin of businesses.

2.2.2 CHANGE IN NUMBER OF ONE-GRAM FLOWER SAMPLES REQUIRED

For amounts of flower five pounds or less, the number of one-gram samples required to be submitted for testing per I-502 panel of tests would increase from four grams to eight grams to ensure the lab has sufficient material to conduct the additional pesticide test, resulting in lost revenues. Marijuana flower that is used as a testing sample is not available for sale and therefore results in a loss in revenue. Interviewees identified a value per gram of flower range from $2.50 to $6.00 (though the high-end estimate was a retail price inclusive of packaging). This range generally aligns with survey responses to this question. Based on the information provided in industry interviews and through the survey, we assume an average per gram value of $3.00 for each gram of marijuana flower diverted for testing.

Average Annual Lost Revenues per Business

Within each of the bins previously identified (Exhibit 2-2), the revenues lost per business is driven by the number of tests on flower that business runs annually. The rule would require that for each five-pound amount of marijuana flower subject to testing, a business would need to submit eight, one-gram samples as opposed to the four, one-gram samples currently required. As described in Section 2.2.1, we assume businesses would continue to test product at the same frequency following implementation of the rule as they have in recent years.

We assume that for each instance of testing a business conducts on flowers, it must submit an additional four grams of flower to the lab. For each of the bins described in Exhibit 2-2, we calculate the total loss of revenue in the form of diverted product (i.e., flower that is provided to a lab for testing and therefore cannot be sold by the producer) using the information on the number of tests run on flowers by each business annually, and the average value of a gram of marijuana flower.[24] We present these estimates of lost revenue in Exhibits 2-3 and 2-5. Cost resulting from this rule element again vary widely across the businesses. These costs are not incurred by businesses that test only intermediate product, and are highest for those businesses with the highest frequencies of flower testing.

The estimates of lost revenue associated with flower diverted to testing are subject the following assumptions:

1. We assume the future rate of I-502 panel testing on flower is similar to the average rate of testing over the years 2018-2020. If the rate of flower testing increases or decreases in the future, this analysis may under- or over-estimate the amount of flower that would be diverted to testing and thus the lost revenues associated with that flower.
2. This estimate does not account for the potential offsetting benefit of businesses increasing the amount of flower that can be tested using a single I-502 panel of

[24] We rely on the median, rather than average number of tests run per businesses in each bin as more representative of the data which are not evenly distributed across the range, but include notable outliers at the higher end of each range.

tests. We assume that producers and processors would continue to test five-pound lots of flower, and that for each five-pound amount of flower tested, four additional grams of flower is diverted to testing. To the extent that five-pound amounts that the analysis assumes would be tested individually may instead be consolidated into larger amounts for testing, the amount of diverted flower for testing would be less than what is estimated here. Under the proposed rule, any testing instance on amounts of flower exceeding five pounds would not require an increase in the number of one-gram samples required to be diverted to testing, and would not result in lost revenues.

2.2.3 ADDITION OF RANDOM OR INVESTIGATION-DRIVEN HEAVY METALS SCREENING

Although screening for heavy metals would not be required under the proposed rule, WSLCB may conduct random or investigation-driven heavy metals screening to ensure compliance with existing heavy metals limits. As a result, we consider whether businesses are likely to proactively screen their flower or intermediate products for heavy metals as a business decision to ensure it would meet existing heavy metal screening criteria. If triggered by this rulemaking, the costs of this additional heavy metals testing are relevant to the SBEIS.

The existing regulations include heavy metal limits for arsenic, cadmium, lead, and mercury that may not be exceeded in any marijuana product, and these limits are unchanged by the proposed rule. Further, existing regulations require that upon request by WSLCB or its designee, licensees must provide samples of marijuana products or other related materials to be screened for pesticides, chemical residues, unsafe levels of heavy metals, or other quality assurance tests as deemed necessary by WSLCB. According to WSCLB, the primary difference between the proposed rule and existing regulation is that current heavy metals spot testing is primarily compliance or investigation-driven, while the proposed rule would include random spot-testing for heavy metals that is not driven by investigations.[25]

Several industry representatives interviewed for this analysis suggested that they do some extent of heavy metals testing on their product, although it is not required by existing regulations.[26] Based on the results of the industry survey, of the 74 producers and producer processors who responded to a question asking whether they currently conduct some extent of heavy metals testing, 26 percent answered in the affirmative.[27] Interviewees described that industry participants are generally aware that certain types of growing and/or processing practices are more closely associated with the potential for heavy metals contamination. They indicated that businesses engaged in those activities are already conducting some extent of heavy metals testing to ensure compliance with existing thresholds, while those not engaged in those types of activities would not

[25] Personal communication with WSLCB on September 27, 2021.

[26] Results of interviews conducted with affected businesses between September 3 and September 24, 2021.

[27] Results of WSLCB survey of all marijuana producer and processor license holders conducted in September 2021.

anticipate a concern with heavy metals contamination and would not have a reason to test for them regularly.[28] The majority of industry representatives interviewed for this analysis who reported conducting some extent of heavy metals testing described that testing might be done once or only very occasionally to confirm expectations that metals are not present in their products, although at least one indicated they test all of their intermediate products.[29] If a confirmatory test were done and has confirmed their flower or products are clean of them, they would not have cause to continue to test those flowers or products. Finally, they suggested that a rule laying out the option for heavy metals spot testing by WSLCB would not compel them to change the frequency of heavy metals testing they do on their products.[30] Of those that did not report current heavy metals testing, only one suggested that the rule may compel them to do some heavy metals testing on their products, but tests would only be run at most once per year (i.e., far below the frequency required for other I-502 tests).[31] This finding is corroborated by the survey results identifying that of the 56 producers and producer processors who do not currently conduct heavy metals testing, 53 percent would not choose to do any heavy metals testing, while 42 percent would test some, but not all of their products.[32] Of the 23 survey respondents that suggested the proposed rule would compel them to test some of their products, based on information provided by industry interviewees, we expect the rate of that testing to be very low (i.e, once per year or less).

Altogether, this analysis finds that the proposed rule is unlikely to result in substantial new costs for heavy metals testing to individual businesses. For the small subset of businesses that may conduct new heavy metals tests as a result of the rule, the anticipated range of costs for an individual heavy metals test is $70 to $200, and these costs would be incurred once annually or less.[33]

2.2.4 INCREASE IN MAXIMUM AMOUNT OF MARIJUANA FLOWER THAT MAY BE REPRESENTED BY A SINGLE I-502 PANEL OF TESTS

Under existing regulations, producers must submit samples and pay for a panel of I-502 tests for every five-pound lot of flower produced. The proposed rule would allow for a single strain of flower in amounts up to 50 pounds to be tested using a single panel of tests. For example, a producer currently submitting three, five-pound lots of a single strain of flower for testing at once must currently pay a laboratory for three panels of I-

[28] Results of interviews conducted with affected businesses between September 3 and September 24, 2021.

[29] Interview with an Industry Representative on September 24, 2021.

[30] Results of interviews conducted with affected businesses between September 3 and September 24, 2021.

[31] Interview with an Industry Representative on September 24, 2021.

[32] Results of WSLCB survey of all marijuana producer and processor license holders conducted in September 2021.

[33] Interviewees identified a cost range for heavy metals testing of $70 to $200 per test, and online research of cannabis testing labs indicated a price of $70 per test offered by at least one lab. The majority of survey respondents identified a cost of less than $100, although two indicated a cost of over $400. Based on these data, we identify a range of costs for heavy metals testing of between $70 and $200.

502 tests (one for each lot). Under the proposed rule, this producer would pay for a single panel of I-502 tests that could represent the entire 15-pound amount of flower.

This proposed provision is not expected to result in new costs to businesses. Rather, to the extent that producers are growing and harvesting sufficient amounts of single strains at a time (i.e., greater than five pounds), or can modify growing practices to do so, costs associated with existing I-502 testing requirements are expected to decrease. The extent to which costs would change as a result of this rule provision differs significantly across businesses. Quantifying the changes in costs associated with increasing testing amounts would require detailed information on individual growing practices, such as how many strains are grown, and what amount can be harvested and prepared for testing at once. These data were not available.

Although data are not available to quantify the changes in costs that would result from this rule element, information collected during interviews and through the survey provide insight into the potential effect of this proposed rule requirement. The businesses interviewed expected to see the greatest degree of reduced testing costs are those that can harvest larger amounts of a single strain of flower. Accordingly, several interviewees suggested it would be the larger, higher volume businesses that would benefit the most from this rule provision.[34] Nonetheless, most interviewees, including many smaller businesses, concluded that it would be possible for them to take advantage of testing high amounts at once (e.g., ten pounds), which would reduce their costs for currently required tests.[35] Further, two interviewees noted that existing growing operations were designed around the five-pound lot testing amount, and that businesses were likely to adapt growing operations around the new testing amounts to take advantage of potential testing costs savings.[36] Of the 43 survey responses to the open-ended question "Do you have any other thoughts or comments regarding the potential costs of changes to the recreational cannabis testing requirements that you would like us to consider in developing the SBEIS?", nine respondents (21 percent) suggested they wanted and could take advantage of larger lot sizes.[37]

2.2.5 LABOR/ADMINISTRATIVE COSTS

Administrative costs associated with rule compliance are considered a cost of the rule and should be addressed within an SBEIS. The potential administrative costs of the proposed rule include the labor and administrative time associated with preparing samples to be transferred to a lab for testing. According to interviewees, the administrative and labor costs associated with drawing and preparing samples for transfer are primarily driven by the number of times a shipment of samples must be sent to a lab.[38] These costs include

[34] Interviews with Industry Representatives on September 13, 2021; September 21, 2021; September 15, 2021; and , September 22, 2021.

[35] Results of interviews conducted with affected businesses between September 3 and September 24, 2021.

[36] Interview with Industry Representatives on September 21, 2021; and September 23, 2021.

[37] Results of WSLCB survey of all marijuana producer and processor license holders conducted in September 2021.

[38] Interview with an Industry Representative, September 24, 2021.

cleaning and preparation of the equipment used to collect samples, and paperwork associated with documenting the samples, preparing chain of custody and other documentation, etc. At least one interviewee noted that an increase in the number of one-gram samples prepared for a single shipment does not meaningfully change their administrative costs.[39,40] The proposed rule would hold consistent or potentially decrease the number of sample shipments sent by a business each year (due to the ability to test larger amounts of marijuana flower in a single test/shipment). As such, the rule is not expected to result in increased administrative costs to the affected businesses.

2.2.6 TOTAL COSTS

Exhibits 2-3 through 2-5 present the total quantified costs of the proposed rule, which include the costs of pesticide testing and loss of revenue in the form of diverted product. Rule costs vary substantially across business types, and between the identified groups of businesses within each business type, with costs increasing as the frequency of testing increases. Exhibit 2-6 presents the weighted average anticipated total costs of the rule by business type, and across all businesses.

Businesses testing flower only may incur costs as low as $48 (for the 45 businesses with a testing rate for flowers of less than one annually, assuming the lower estimated pesticide test cost of $60) to as high as $19,440 (for 23 businesses with a flower testing rate of 120 annually and a pesticide testing cost of $150). On average, costs to these businesses are estimated to be between $1,616 and $3,635. Costs to businesses testing intermediate products only may be as low as $40 annually (for the 50 businesses with an intermediate product testing rates of less than one annually) to as high as $61,250 annually (for the 24 businesses with a testing rate of 408 intermediate product tests annually). Across all businesses testing intermediate products only, the weighted average range of estimated costs of the rule is $4,916 to $12,290. Finally, for businesses testing both flower and intermediate products, rule costs may be as low as $438 (for the 166 businesses with a total testing rate of less than seven annually) to as high as $116,067 (for the 70 businesses with a testing rate of 745 tests annually). The weighted average costs of the rule for businesses testing both flower and intermediate product is $10,326 to $24,436.

[39] Additionally, under the proposed rule, the number of one-gram samples required per pound of marijuana flower only increases for amounts of flower under five pounds. For amounts of flower over five pounds, the number of one-gram samples required per pound of flower would decrease.

[40] Interview with an Industry Representative, September 24, 2021.

EXHIBIT 2-6. WEIGHTED AVERAGE ANNUAL RULE COSTS, REVENUES, AND COSTS AS A PERCENTAGE OF REVENUES (2020$)

BUSINESS TYPE	WEIGHTED AVERAGE ANNUAL REVENUES	WEIGHTED AVERAGE ANNUAL TOTAL COSTS (LOW)	WEIGHTED AVERAGE ANNUAL TOTAL COSTS (HIGH)	COST AS PERCENT OF REVENUE (LOW)	COST AS PERCENT OF REVENUE (HIGH)
Testing Flowers Only	$227,660	$1,616	$3,635	0.7%	1.6%
Testing Intermediate Product Only	$1,329,917	$4,916	$12,290	0.4%	0.9%
Testing Flowers and Intermediate Product	$1,190,508	$10,326	$24,436	0.9%	2.1%
All Businesses	**$1,038,275**	**$7,625**	**$18,140**	**0.7%**	**1.7%**

Sources:
Average annual revenue data extracted from Leaf Data System by LCB, October 2021.
Annual number of tests for flower and/or intermediate products by license holder from 2018 through 2020 provided from Leaf System by WSLCB on October 22, 2021.
Cost of pesticide test based on interviews with producers and processors, September 2021; results of industry survey conducted by WSLCB in September/October 2021; and online research into testing prices posted on laboratory websites (October 2021).
Value of 1 gram of marijuana flower based on interviews with producers and processors, September 2021; and results of industry survey conducted by WSLCB in September/October 2021.

2.3 ASSESSMENT OF MINOR COST

As shown in Exhibits 2-3 through 2-5, given the minor cost thresholds for the groups of businesses considered in this analysis and the estimated costs of compliance, this rule is likely to impose more than minor costs on the majority of the businesses in the industry (costs exceeding the minor cost threshold are shaded in gray in each exhibit). For businesses testing only flower, the weighted average annual costs of the rule as a percentage of average revenue are estimated to be between 0.7 percent and 1.6 percent, exceeding the minor cost threshold of 0.3 percent. For the 110 businesses conducting an average of ten or more flower tests annually (52 percent of the 210 businesses in this group that reported tests in 2018 to 2020), rule costs are estimated to be more than minor. For businesses testing intermediate products only, rule costs are estimated to range from 0.02 percent to 1.2 percent of revenues, with a weighted average annual cost of the rule as a percentage of average revenue between 0.4 percent and 0.9 percent, exceeding the minor cost threshold. Of the 223 businesses in this group, the 173 businesses (78 percent) that are expected to test seven or more batches of product annually on average would incur more than minor costs. Producer/Processor businesses that test both flower and intermediate products may anticipate costs ranging from 0.1 percent to 2.9 percent of annual revenues, with a weighted average range across those businesses of 0.9 percent to 2.1 percent (exceeding the minor cost threshold). Of the total number of businesses in this group (691), 525 of those businesses (76 percent) would incur more than minor costs.

Altogether, 808 businesses (72 percent) would experience more than minor costs as a result of the proposed rule. However, it is important to note that the ability for license holders to test larger amounts of flower with a single panel of 502 tests and a single pesticide test would reduce these costs.

2.4 DISPROPORTIONATE ECONOMIC IMPACT ANALYSIS

When proposed rule changes cause more than minor costs to small businesses, the RFA (RCW 19.85.040) requires an analysis that compares the cost of compliance for small business with the cost of compliance for the ten percent of businesses that are the largest businesses required to comply with the proposed rules to determine whether the costs are considered disproportionate.[41] Over 99 percent of the regulated businesses in this industry are small. As a result, the rule is found to disproportionately impact small businesses, and this SBEIS accordingly identifies and documents cost mitigation strategies.

2.5 COST MITIGATION STRATEGIES

RCW 19.85.030 requires that, when a rule is expected to disproportionately impact small businesses, the agency consider several methods for reducing the impact of the rule on small businesses. The proposed rule itself includes several provisions that are intended to reduce the compliance costs for small businesses. These provisions are described in Exhibit 2-7.

EXHIBIT 2-7. RULE PROVISIONS DESIGNED TO REDUCE RULE COSTS

RULE PROVISION	DESCRIPTION	MECHANISM OF COST REDUCTION
Addition of random or investigation-driven heavy metals screening.	WSLCB may conduct investigation-driven or random spot testing of flower and intermediate product for heavy metals.	Businesses do not have to incur the costs of heavy metals testing on all amounts of flower or batches of intermediate product.
Increase in maximum amount of marijuana flower that may be represented by a single I-502 panel of tests.	Increasing the amount of flower that can be tested using a single I-502 test panel from one test panel per five-pound lot to a single test panel per amounts up to 50 pounds.	Businesses that are able to prepare larger quantities of flower for testing can reduce the number of pesticides tests required under the proposed rule, as well as reduce the number of I-502 test panels currently required, which reduces their testing costs.
Change in number of one-gram flower samples required.	For amounts of flower greater than five pounds, reducing the number of one-	On a per pound basis, reduces the amount of flower diverted to testing, instead allowing that flower to be sold, and reducing

[41] The RFA provides several options for comparing costs, including: (a) Cost per employee; (b) Cost per hour of labor; (c) Cost per one hundred dollars of sales (RCW 19.85.040(1)). In the absence of sufficient data to calculate disproportionate impacts, an agency whose rule imposes more than minor costs must mitigate the costs to small businesses, where legal and feasible, as defined in this chapter (RCW 19.85.030(4)).

	gram samples required per pound of tested flower.	lost revenues associated with diverted flower.

During development of the proposed rule, through an amendment to WAC 314-55-075, WSLCB increased the allowable canopy size for Tier 1 producers to allow for larger harvests, increasing the ability of those producers to take advantage of the proposed rule provision that allows for amounts of flower up to 50 pounds to be tested with a single panel of tests.

In addition, WSLCB considered a range of suggestions from industry representatives as to how the costs of the rule could be reduced, including:

1. Reduce the number of existing mandatory I-502 tests to accommodate pesticide testing without increasing costs to businesses.
2. Reduce the amount of flower necessary to divert for testing (i.e., maintaining the same four-gram requirement for five-pound lots).
3. Reduce the total number and frequency of pesticides tests required, for example:
    - Regular third-party testing periodically (e.g., quarterly or once a month), funded by the industry.
    - Allowing for more than one strain to be tested together as a single lot, so long as strains are grown in the same indoor room, or receive the same outdoor treatment.
4. Implement measures that might facilitate an ability for producers and processors to raise the price of their products:
    - Consider an education campaign to inform retailers and consumers of the benefits of pesticides and heavy metals testing; could help increase prices to allow for producer/processors to pass on some of the increased cost of testing.
    - Consider revisions to the structure of the industry in which producers may pass costs of testing onto retailers.
5. Shift testing requirements from flower and intermediate products to end products.
6. Consider having WSLCB test flower at the retailer level, rather than having flower tested by producers.
    - Consider increased enforcement through increased random sampling by LCB to ensure those acting fairly are not disadvantaged.

WSLCB considered these and other cost reduction options presented by the industry. However, LCB has determined they cannot be included for multiple reasons, including that they didn't meet the intended goals of the rule (e.g., testing end products after they were already placed on retail shelves), did not meaningfully reduce the costs of the rule (e.g., eliminating existing I-502 panel tests identified by the industry), were not feasible

due to constraints (e.g., reducing the number of one-gram samples of flower required to test a five-pound amount of flower), or were outside of the bounds of the rule.

The regulating agency must consider delaying compliance timetables as a potential cost mitigation option. During this rulemaking, WSLCB did consider delaying the timeframe for compliance with the pesticide and heavy metals testing requirements previously contemplated, and developed an extensive 18-month phase-in plan in the prior CR 102 proposal and supplemental proposal. As heavy metals testing is no longer required under the proposed rule, WSLCB is no longer considering a delay in compliance timing.

Other types of cost mitigation strategies that must be considered are not relevant to this rulemaking:

- **Reducing the frequency of inspections**: This rule does not change the rate at which inspections carried out by WSLCB would occur.
- **Simplifying, reducing, or eliminating recordkeeping and reporting requirements:** The rule does not impose any additional reporting or recordkeeping requirements on the industry.
- Reducing or modifying fine schedules for non-compliance: This rule does not affect fines for noncompliance.

2.6 INVOLVEMENT OF SMALL BUSINESSES IN RULE-MAKING PROCESS

Throughout the rule-development process, the WSLCB has engaged with small businesses likely to be affected by the rule. In 2019, WSLCB hosted two "listen and learn" sessions, inviting industry discussion and feedback on the proposed rule. The WSLCB's stakeholder process encouraged interested parties and industry partners to:

- Identify burdensome areas of existing and proposed rule;
- Proposed initial or draft rule changes; and
- Refine those changes.

In 2021, WSLCB hosted a series of three Deliberative Dialog Sessions to allow stakeholders an opportunity to voice their perspectives on cannabis quality assurance testing. The three sessions focused on the perspectives of three distinct elements of the supply chain affected by changes to cannabis quality assurance testing – consumers, licensed producers and processors, and certified testing labs, respectively. Information collected during these sessions further informed development of the proposed rule.

The proposed rule went through several stages of edits, review, discussion, and then further refinement before arriving at the final proposal. The end result of this process is a proposed rule that would provide a framework and guidance for testing marijuana products that supports the overarching WSLCB goal of public health and safety.

A summary of the description of issues related to the proposed rule set and how the agency collaborated with stakeholders and industry partners to mitigate potential burden

associated with rule compliance is more fully described in the Significant Analysis prepared consistent with RCW 34.05.328, and offered as part of this rule proposal.

To support development of this SBEIS, WSLCB invited licensed businesses to participate in a one-hour interview with the authors of the SBEIS. WSLCB selected 25 producers and/or processors representing a range of business types, producer tiers, business sizes, and geographies to participate in the interviews. WSLCB's contractor contacted prospective interviewees via email or phone call to schedule interviews. Potential interviewees were given several options within a one-month window for an interview, with additional times and dates offered if those originally proposed were not compatible with interviewee schedules. In the case that prospective interviewees did not respond after the first contact, they were contacted two to three times in additional attempts to schedule an interview. Ultimately, interviews were conducted with 14 producer/processors and 4 processors (see Attachment A for a list of industry representatives interviewed). Additional opportunity for public comment will be available when the proposed rule is published.

To solicit information to support this SBEIS from as broad a sample of licensed businesses as possible, WSLCB also worked with its contractor to design an online survey targeted to collecting key data points and business thoughts regarding potential provisions of the proposed rule. WSLCB invited all licensed businesses to participate in this survey, which was distributed by email on September 17, 2021. Of the 4,820 email recipients representing license holders to whom the survey was provided, 116 (2 percent) provided a response by the September 24, 2021 deadline.

2.7 JOBS CREATED OR LOST

The impacts to individual producers and processors would depend on their ability to limit their increased costs by increasing the amount of flower that is tested per testing panel, and to pass on increased testing costs (in the form of higher prices to retailers). However, the proposed rule is not expected to affect the amount of cannabis produced. Thus, the proposed rule is unlikely to affect the overall (i.e. industry-wide) number of employees of producer/processors. For example, if increased testing costs lead some smaller entities to cease production, other entities may produce larger volumes. While the additional testing costs may cause some small businesses to close if they are unable to pass on the increased testing costs; the likelihood of this occurring is unknown.

The extent to which employment may change within an individual business would depend on the specific costs incurred by that business and its ability to absorb those costs by reducing costs in other areas, raising prices, or reducing profits, for example. Several interviewees suggested that the increased costs of pesticide testing may be substantial enough to result in reduction of staff hours or release of staff.[42] One interviewee noted that there are substantial operating costs associated with marijuana production and processing, and that modifications to employment is oftentimes the only available option

[42] Email communication between licensed business interviewees and IEc in October 2021.

for reducing costs.[43] Conversely, at least one interviewee anticipated that compliance with the new regulations may require him to hire an additional employee.[44] Overall, given the relatively low costs of the rule compared to revenues reported for these businesses, it seems unlikely that the costs of the rule would result in widespread reductions in employment across these businesses.

[43] Email communication between an Industry Representative and IEc, September 23, 2021.

[44] Email communication between an Industry Representative and IEc, October 18, 2021.

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ATTACHMENT A: LIST OF INDUSTRY REPRESENTATIVES INTERVIEWED IN SEPTEMBER 2021

COMPANY NAME	LICENSE TYPE
Green Dreamer	Producer/Processor- Tier 1
Bellevue Cannabis Company	Producer/Processor- Tier 1
Manna Production	Producer/Processor- Tier 1
Washington Bud Company	Producer/Processor- Tier 2
View Askew Farms	Producer/Processor- Tier 2
Freya Farm	Producer/Processor- Tier 2
Yield Farms	Producer/Processor- Tier 2
LandRace	Producer/Processor- Tier 2
Eagle Trees Farm	Producer/Processor- Tier 2
Downtown Cannabis Company	Producer/Processor- Tier 2
Spark Industries	Producer/Processor- Tier 2
FBR South Bay LLC	Producer/Processor- Tier 2
Golden Leaf "The Natural Choice"	Producer/Processor- Tier 3
Driftboat Cannabis	Producer/Processor- Tier 3
Narwal Naturals	Processor
Heylo Cannabis	Processor
Skagit Organics	Processor
MFUSED	Processor

ATTACHMENT B: INTERVIEW GUIDE

INTERVIEW QUESTIONS

INTRODUCTION

- Who IEc is.
- We have been hired by LCB to develop a Small Business Economic Impact Statement for the forthcoming proposed rule.
- Goal of the SBEIS is to identify if the rule would disproportionately affect small businesses (defined as businesses with less than 50 employees), determine if the rule would result in more than minor costs to those businesses (defined as costing more than 0.3% of revenues), and identify potential mitigation for those costs.

DEMOGRAPHIC/BUSINESS INFORMATION

- Name of company
- Number of employees
- Business type (grower/processor/grower-processor)
- Tell us about your business in terms of products/what you do, what you produce, who you sell to (retail, processors), products you make, what uses your product goes to, etc.

OVERVIEW OF POTENTIAL PROPOSED RULE

- Ask what their status of knowledge is regarding rule development. Be clear that the rule is still under development/has been evolving over time. Can talk about the elements "being considered", which include:
    - Increasing lot size that can be tested with one set of tests (currently can only do 5 lbs at a time, rule would allow potentially more).
    - Requiring pesticide testing for flower going to retail and intermediate products.
    - Spot testing for heavy metals by LCB (but no requirement to do testing).

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QUESTIONS FOR GROWERS

- Tell us about your operation in terms of production volumes and annual revenues (if willing to share).
- Of the flower you are harvesting, what proportion is sent directly to retailers vs. processed to create other products?
- How many 5 lb lots of flower do you pay for to have tested annually?
- What is the level of effort (labor cost, time spent, etc.) associated with collecting samples for testing? If more samples had to be collected, would that increase your costs?
- Cost per single set of tests for the currently required tests?
- If you could increase the quantity of flower that could be tested with a single set of tests, would you increase the quantities you send for testing? How? What quantities could you produce of single strains and how many of them would you have tested annually?
- What do you estimate is the value of the quantity of flower diverted for testing presently (e.g., value per gram diverted, and total value of all flower diverted for testing annually)?
- Do you currently conduct pesticide testing on your flowers?
- Cost of pesticide test?
- Absent a requirement to test flower that will be sold for processing for the current suite of tests including moisture, foreign substance, etc. and now adding pesticides), would you have all of your flower tested? If not, would you have some portion tested? Would you only have certain tests, but not all, conducted? What would dictate your decision? Do you expect your buyers would request that it be done anyway?
- Do you presently conduct heavy metals testing on your flowers?
- Do you expect to conduct heavy metal testing if LCB may do spot testing on flower and intermediate products? What would drive that decision?
- Anything else you'd like to tell us about how do you expect your costs to change under the new rule?
- What types of things could LCB consider in this rulemaking that would alleviate or mitigate some of the cost burden of the rule?

QUESTIONS FOR PRODUCER-PROCESSORS

- Tell us about your operation in terms of production.
    - Do you grow any flower that is sold directly for retail?
    - Do you sell your flowers to other processors, or is all processing of your flowers done in-house?

  - Is your processing operation supplied solely with flower that your company grows?
- For flower that goes directly to retail for sale:
- See questions in "Growers" section.
- For flower purchased from other growers, would you expect to make purchasing decisions that require that growers test their flower before you would purchase it?
- For your processing production:
  - *See questions in "Processors" section.*
- Anything else you'd like to tell us about how do you expect your costs to change under the new rule? What types of things could LCB consider in this rulemaking that would alleviate or mitigate some of the cost burden of the rule?

QUESTIONS FOR PROCESSORS

- Tell us about your operations in terms of what you produce, production volumes/numbers of batches, and revenues (if willing to share).
- Do you purchase flower for your production, or are you purchasing distillates or other intermediate products to develop end products?
- Do your suppliers currently test their flowers or intermediate products for pesticides or heavy metals prior to you purchasing it?
- Absent a requirement for growers to test flower prior to processing, would you make purchasing decisions based on whether or not the flower has been tested (e.g., only purchasing from growers that test their flower?)
- How many sets of tests do you conduct/pay for annually on the volume of production previously described? How many batches of product do you have tested each year?
- Cost of that testing?
- Do you test the intermediate products you produce for pesticides or heavy metals?
- If heavy metal testing was not required for intermediate products, but LCB may test for it periodically, would that change your decision about conducting heavy metal testing on your products?
- The costs we expect your business type to incur include the cost of pesticide tests for each batch of product sent for testing, and any costs of heavy metal testing you may choose to conduct as a result of the rule. Do you expect to incur other costs as a result of this rule?
- Anything else you'd like to tell us about how do you expect your costs to change under the new rule?
- What types of things could LCB consider in this rulemaking that would alleviate or mitigate some of the cost burden of the rule?

ATTACHMENT C: INDUSTRY SURVEY QUESTIONS

SURVEY QUESTIONS

DEMOGRAPHIC/BUSINESS INFORMATION

- How many people does your business employ?
  - Fewer than 50
  - 50 or more
- What are the average *monthly* revenues of your business?
  - <$50,000
  - $50,000 to < $100,000
  - $100,000 to < $500,000
  - $500,000 to <$1,000,000
  - >$1,000,000
- What type of license do you hold?
  - Grower only
  - Grower/Processor
  - Processor only

QUESTIONS FOR "GROWER ONLY" LICENSE

- What is your average *annual* flower production in pounds?
- What portion of your flower production is sold directly to retailers?
  - <10%
  - 10%-20%
  - 21%-30%
  - 31%-40%
  - 41%-50%
  - 51%-60%
  - 61%-70%
  - 71%-80%

- 81%-90%
- 91%-100%

- What portion of your flower production is sold to processors for processing into intermediate products?
  - <10%
  - 10%-20%
  - 21%-30%
  - 31%-40%
  - 41%-50%
  - 51%-60%
  - 61%-70%
  - 71%-80%
  - 81%-90%
  - 91%-100%
- Given your current production, how many 5 pound lots of flower do you have tested for the currently required tests annually (i.e, Moisture content, Potency analysis, Foreign matter inspection, Microbiological screening, and Mycotoxin screening)?
- What do you currently pay in dollars per complete suite of required tests (i.e., excluding any voluntary testing for pesticides, heavy metals, etc., the total testing cost for a 5 pound lot)?
  - <$100
  - $100 to <$200
  - $200 to <$300
  - $300 to <$400
  - >$400
- Do you currently conduct any pesticide testing on your flowers?

    a. Yes

    b. No

    What is the cost in dollars that you pay for each pesticide test? *[only display question if answer to question above is "yes"]*

    a. <$100

    b. $100 to <$200

    c. $200 to <$300

d. $300 to <$400

e. >$400

- Do you presently conduct any heavy metals testing on your flowers?

  a. Yes

  b. No

  What is the cost in dollars that you pay for each heavy metals test? *[only display question if answer to question above is "yes"]*

  a. <$100

  b. $100 to <$200

  c. $200 to <$300

  d. $300 to <$400

  e. >$400

- Would you conduct heavy metals testing on your flowers if it were not required, but if flowers or products made from your flowers may be spot-tested by the Board to ensure they do not exceed the existing heavy metal content standards?

  a. Yes

  b. No

  c. I would test some, but not all of my flowers.

- What is the average lost revenue associated with each 1 gram sample that must be diverted to testing?

- Do you have any other thoughts or comments regarding the potential costs of changes to the recreational cannabis testing requirements that you would like us to consider in developing the SBEIS?

QUESTIONS FOR "GROWER/PROCESSORS" ONLY

4. What is your average *annual* flower production in pounds?

5. What portion of your flower production is sold directly to retailers?

   a. <10%

   b. 10%-20%

   c. 21%-30%

   d. 31%-40%

   e. 41%-50%

   f. 51%-60%

   g. 61%-70%

   h. 71%-80%

i. 81%-90%

j. 91%-100%

6. What portion of your flower production is processed in-house into intermediate products?

   a. <10%

   b. 10%-20%

   c. 21%-30%

   d. 31%-40%

   e. 41%-50%

   f. 51%-60%

   g. 61%-70%

   h. 71%-80%

   i. 81%-90%

   j. 91%-100%

7. What portion of your flower production is sold to processors for processing into intermediate products?

   a. <10%

   b. 10%-20%

   c. 21%-30%

   d. 31%-40%

   e. 41%-50%

   f. 51%-60%

   g. 61%-70%

   h. 71%-80%

   i. 81%-90%

   j. 91%-100%

8. Given your current production, how many 5 pound lots of flower do you have tested for the currently required tests annually (i.e, Moisture content, Potency analysis, Foreign matter inspection, Microbiological screening, and Mycotoxin screening)?

   a. <10

   b. 10 to < 50

   c. 50 to <100

   d. 100 to <250

e. 250 to <500

f. 500 to <1,000

g. >1,000

9. What do you currently pay in dollars per complete suite of required tests (i.e., excluding any voluntary testing for pesticides, heavy metals, etc., the total testing cost for a 5 pound lot)?

   a. <$100

   b. $100 to <$200

   c. $200 to <$300

   d. $300 to <$400

   e. >$400

10. Do you currently conduct any pesticide testing on your flowers?

    a. Yes

    b. No

    What is the cost in dollars that you pay for each pesticide test? *[only display question if answer to question above is "yes"]*

    a. <$100

    b. $100 to <$200

    c. $200 to <$300

    d. $300 to <$400

    e. >$400

11. Do you presently conduct any heavy metals testing on your flowers?

    a. Yes

    b. No

    What is the cost in dollars that you pay for each heavy metals test? *[only display question if answer to question above is "yes"]*

    f. <$100

    g. $100 to <$200

    h. $200 to <$300

    i. $300 to <$400

    j. >$400

12. Would you conduct heavy metals testing on your flowers if it were not required, but flowers or products made from your flowers may be spot-tested by the Board to ensure they do not exceed the existing heavy metal content standards?

d. Yes

e. No

f. I would test some, but not all of my flowers.

13. What is the average lost revenue associated with each 1 gram flower sample that must be diverted to testing?

14. Is your processing operation supplied solely with flower grown by your own farm?

    a. Yes

    b. No

15. What inputs do you use to support your processing operations? (Check all that apply)

    - I purchase flowers from other growers
    - I purchase intermediate products from other processors
    - My only inputs are flowers or intermediate products that are grown/processed by my own business.

    Do you require that your suppliers test their flowers for pesticides prior to purchase? [*only display question if response to question 15 includes first option "I purchase flower from other growers"]*

    a. Yes

    b. No

    Do you require that your suppliers test their flowers for heavy metals prior to purchase? [*only display question if response to question 15 includes first option "I purchase flower from other growers"]*

    a. Yes

    b. No

16. If the intermediate products you produce would require pesticide testing, will this influence how you purchase flowers, or from whom?

    a. I would only purchase flowers from growers who have tested their flowers

    b. I would prefer to purchase flowers from growers who have tested their flowers.

    c. If I am required to test my products for pesticides, I would not have a preference between growers that have or have not tested their flowers.

17. What type of products do you produce through your processing activities (i.e., not including flower)?

    a. Only intermediate products (e.g., distillates)

b. Only end products (e.g., infused beverages)?

c. I produce both intermediate and end products.

18. How many batches of intermediate product (i.e., not end products, but those intermediate products produced directly from flower) do you currently have tested for the required suite of tests annually (i.e, Moisture content, Potency analysis, Foreign matter inspection, Microbiological screening, and Mycotoxin screening)?

    a. <10

    b. 10 to < 50

    c. 50 to <100

    d. 100 to <500

    e. 500 to <1,000

    f. >1,000

19. What is the per batch cost of the required suite of tests (i.e., not including any voluntary testing for pesticides, heavy metals, etc)?

    a. <$100

    b. $100 to <$200

    c. $200 to <$300

    d. $300 to <$400

    e. >$400

20. Would you conduct heavy metals testing on your intermediate products if it were not required, but products may be spot-tested by the Board to ensure they do not exceed the existing heavy metal content standards?

    a. Yes

    b. No

    c. I would test some, but not all of my products.

21. Do you expect to pass any additional costs of pesticide and/or heavy metals testing on to the buyers of your products?

    a. I would expect to pass all costs of testing on to my buyers.

    b. I would expect to pass some of the costs of testing on to my buyers.

    c. I do not expect to pass the costs of testing on to my buyers.

22. Do you have any other thoughts or comments regarding the potential costs of changes to the recreational cannabis testing requirements that you would like us to consider in developing the SBEIS?

QUESTIONS FOR HOLDERS OF "PROCESSING ONLY" LICENSE

4. What inputs do you use to support your processing operations? (Check all that apply)
    - o I purchase flowers from growers
    - o I purchase intermediate products from other processors
    - o Other (please describe) *[display text box for information entry if this option is included in the selection]*
5. What type of products do you produce?
    a. Only intermediate products (e.g., distillates)
    b. Only end products (e.g., infused beverages)?
    c. I produce both intermediate and end products.

    Do you require that your suppliers test their flowers for pesticides prior to purchase? [*only display question if response to question 4 includes the first option "I purchase flowers from growers"]*
        a. Yes
        b. No

    Do you require that your suppliers test their flowers for heavy metals prior to purchase? [*only display question if response to question 4 includes the first option "I purchase flowers from growers"]*
        a. Yes
        b. No

    Do you require that your suppliers test their intermediate products for pesticides prior to purchase? [*only display question if response to question 4 includes the second option "I purchase intermediate products from other processors"]*
        a. Yes
        b. No

    Do you require that your suppliers test their intermediate products for heavy metals prior to purchase? [*only display question if response to question 4 includes the second option "I purchase intermediate products from other processors"]*
        a. Yes
        b. No
6. If the intermediate products you produce would require pesticide testing, will this influence how you purchase your flowers, or from whom?
        a. I would only purchase flowers from growers who have tested their flowers

b. I would prefer to purchase flowers from growers who have tested their flowers.

c. If I am required to test my products for pesticides, I would not have a preference between growers that have or have not tested their flowers.

d. I do not purchase flowers directly.

7. How many batches of intermediate product (i.e., not end products, but those intermediate products produced directly from flower) do you currently have tested for the required suite of tests annually (i.e, Moisture content, Potency analysis, Foreign matter inspection, Microbiological screening, and Mycotoxin screening)?

    a. None, I do not produce intermediate products

    b. <10

    c. 10 to < 50

    d. 50 to <100

    e. 100 to <500

    f. 500 to <1,000

    g. >1,000

    What is the per batch cost of that suite of tests? *[only display question if answer to preceding question is something other than "a"]*

        a. <$100

        b. $100 to <$200

        c. $200 to <$300

        d. $300 to <$400

        e. >$400

8. Would you conduct heavy metals testing on your intermediate products if it were not required, but products may be spot-tested by the Board to ensure they do not exceed the existing heavy metal content standards?

        a. Yes

        b. No

        c. I would test some, but not all of my products.

        d. I do not produce intermediate products

9. Do you expect to pass any additional costs of pesticides and/or heavy metals testing on to the buyers of your products?

        d. I would expect to pass all costs of testing on to my buyers.

e. I would expect to pass some of the costs of testing on to my buyers.

f. I do not expect to pass the costs of testing on to my buyers.

10. Do you have any other thoughts or comments regarding the potential costs of changes to the recreational cannabis testing requirements that you would like us to consider in developing the SBEIS?

ATTACHMENT D: DATA DICTIONARY

DATA ITEM	SOURCE
Number of Licensed Producer/Processors	Email communication from WSLCB to IEc, August 24, 2021.
Number of Producer/Processors considered large	Email communication from ESD to IEc, September 20, 2021.
Producer/Processor 2018-2020 Revenues	Data extracted from Leaf Data System by LCB, October 2021.
Number of Samples Tested Annually	Data extracted from Leaf Data System by LCB, October 2021.
Value of 1 gram of marijuana flower	Interviews with producers and processors, September 2021. Results of industry survey conducted by WSLCB in September/October 2021.
Testing Costs	Interviews with producers and processors, September 2021. Results of industry survey conducted by WSLCB in September/October 2021. Online research into testing prices posted on laboratory websites (October 2021).
Employment Impacts	Interviews with producers and processors, September 2021.

Significant Legislative Rule Analysis

Chapter 314-55
Rules Concerning Marijuana Quality Assurance
and Quality Control Testing

December 8, 2021

SECTON 1:

Describe the proposed rule, including a brief history of the issue, and explain why the proposed rule is needed.

These proposed rule amendments revise and update marijuana quality assurance sampling protocols described in WAC 314-55-101, marijuana quality assurance and control described in WAC 314-55-102, and marijuana proficiency testing described in WAC 314-55-1025.

The purpose of the proposed rules is to require that all marijuana products produced and sold in Washington State are tested for pesticides. The proposed rules also allow the Washington State Liquor and Cannabis Board (WSLCB) to conduct randomized or investigation driven testing for heavy metals in marijuana products. It is anticipated that the effect of these rules will be to promote the overarching goal of the WSLCB to protect public health and safety, and to assure that all products sold within the I-502 market are safe for all consumers.

Proposed changes to existing rules include:

- Revised sample collection and storage procedures;
- Increasing the maximum amount of marijuana flower that may be represented by a single I-502 panel of tests and revising the number of one-gram flower samples required for testing;
- Elimination of the ability of certified labs to return unused portions of samples to licensees; revised guidance to labs regarding when to reject or fail a sample;
- Updated lab testing requirements and procedures;
- Updated and expanded information regarding testing levels for water activity, potency analysis, foreign matter inspection, microbial screening, mycotoxin screening, and residual solvent screening;
- Addition of required pesticide screening and randomized or investigation driven testing for heavy metals;
- Updated rule language regarding product retesting, remediation of failed lots, and referencing of samples; and
- Updated reporting requirements for lab proficiency testing.

The proposed rule also renames and more appropriately refers to marijuana *quality control* sampling protocols and marijuana *quality control* and assurance testing standards. While quality control is a set of activities designed to evaluate a product, quality assurance pertains to activities that are designed to ensure that a *process* is adequate and the system meets its objectives. In contrast, quality control focuses on finding defects or anomalies in a product or deliverable, and checks whether defined requirements are met. Testing is one example of a quality control activity, but there are many more such activities that make up quality control. For these reasons, this proposal renames these sections.

Other proposed revisions include streamlined, clarified language, and section reorganization to increase readability.

Background

In 2012, Washington State voters approved Initiative 502 (I-502) that created a "tightly regulated" system for the production, processing, and distribution of marijuana for adult use by those 21 years of age and older. The WSLCB was tasked with creating the licensing and enforcement frameworks for such a system, assuring that each of these structures supported an overarching agency goal of ensuring the highest level of public safety.

RCW 69.50.348(1) provides that on a schedule determined by the WSLCB, every licensed marijuana producer and processor must submit representative samples of marijuana, usable marijuana, or marijuana infused *products* produced or processed by the licensee to an independent, third-party testing laboratory meeting the accreditation requirements established by the WSLCB for inspection and testing to certify compliance with standards adopted by the WSLCB. The provisions regarding accreditation will likely change on July 1, 2024, when third-party testing laboratories must meet new accreditation standards. However, most other elements regarding regulation of the *product,* including product testing standards, will remain the same. These elements include the following:

- Licensees submit the results of inspection and testing for quality assurance and quality control standards required under this section to the WSLCB on a form developed by the state liquor and cannabis board.
- If a sample inspected and tested under this section does not meet the applicable quality assurance and product standards established by the WSLCB, the entire lot from which the sample was taken must be remediated, or in the case of a failure for pesticides, the entire quantity must be destroyed.
- The WSLCB may adopt rules necessary to implement this section.

During the 2015 legislative session, the Cannabis Patient Protection Act (Senate Bill 5052) was introduced and adopted, creating a regulatory structure for the medical use of marijuana. Although this use had been permitted since 1998, the marijuana produced by individuals and under collective garden systems was not subject to the same testing and production standards as the newly established adult use market. Intended as a "…comprehensive act that uses the regulations in place for the recreational market to provide regulation for the medical use of marijuana," the bill placed the authority to establish standards around product testing for "medically compliant" product with the Department of Health (DOH).

Specifically, the bill noted that the legislature, "…intends that medical specific regulations be adopted as needed and under consultation of the departments of health and agriculture so that safe handling practices will be adopted and so that testing standards for medical products meet or exceed those standards in use in the

recreational market." The enacted amendments authorized WSLCB to determine approved pesticides and pesticide testing requirements, and required DOH to adopt rules related to products sold by licensed retailers holding a medical marijuana endorsement, including but not limited to pesticide testing requirements.

In 2016, the LCB formed a work group to reexamine marijuana quality assurance testing rules described in WAC 314-55-102, including but not limited to testing limits for residual solvents and microbial testing. Four meetings were held in 2016: April 28th, May 11th, June 7th, and July 1st. The work group consisted of 29 members (11 industry, 18 state agency and vendors, and 18 reviewers.)

Subsequently, the WSLCB adopted rules in 2016 related to sampling protocols under WAC 314-55-101, and amended portions of WAC 314-55-102 related to quality assurance testing. Substantial amendments to both regulations occurred in 2017, and more specifically, to WAC 314-55-102, adding a new section (2) clearly describing minimum required testing for each product type. Because DOH had adopted rules related to medically compliant products under WAC 246-70-050, requiring both heavy metal and pesticide screening for medically compliant products, *the WSLCB made these tests optional for adult use marijuana products at that time, based largely on industry concern that the costs of adding pesticide and heavy metals testing would reduce business viability.* Licensees producing and processing adult use marijuana products are not precluded or prevented from requesting pesticide and heavy metals testing for recreational product in addition to the basic suite of required I-502 tests.

Current Landscape

In early 2018, several stakeholders, including medical marijuana patients, consumers, and licensees, urged WSLCB to require producers and processors to test recreational crops for pesticides and heavy metals. These partners asserted that such a move, already adopted in other states, would inspire confidence among consumers, increase access to medically compliant products, and bolster sales. In August 2018, the WSLCB began the initial stages of rule development regarding marijuana quality control and product requirements. Among the rule changes being considered were whether all marijuana products be tested for pesticides and heavy metals.

The purpose of these proposed rules is to require that all marijuana products produced and sold in Washington State are tested for pesticides. The proposed rules also allow the WSLCB to conduct randomized or investigation driven testing for heavy metals in marijuana products. In order to meet potential demand for pesticide testing, there are currently a total of five marijuana testing labs in Washington State capable of testing for the full suite of I-502 tests, along with pesticides.

Licensees are responsible for selecting and implementing their own business models, and as a result, marijuana grows operate with a wide spectrum of growing techniques. Some grows are tightly controlled in indoor facilities; plants are grown in climate-controlled chambers where every aspect of the plant's cultivation is monitored. Other

grows are situated in outdoor environments dependent on seasonal cycles. While the variety of tests an accredited marijuana testing laboratory offers is entirely a business decision of the laboratory, many marijuana businesses are unable to select growing method based on a number of factors, including but not limited to access to capital, race, and gender. These disparities present significant challenges to licensees seeking to participate in the regulated marijuana market.

Marijuana cultivation, both indoor and outdoor, is associated with a variety of pests, bacteria, and fungi. Producers have used a wide variety of pesticides to reduce insect infestation. Pesticide misuse poses serious health risks to consumers, and exposure can result in a variety of well-document symptoms, such as difficulty breathing, abdominal pain, vomiting, dizziness, and muscle cramps. Additionally, some pesticides have been found to be carcinogenic (Taylor & Birkett, 2019).

Emerging literature and multiple studies, both nationally and globally, indicate that marijuana and marijuana products can become contaminated and must be tested to protect public health (Feldman, 2015; Subritzky, Pettigrew & Lenton, 2017; Feldman, 2015; Craven et. al., 2019; Seltenrich, 2019). Marijuana and its products can be contaminated with microbiological contaminants, such as mold or salmonella, potentially hazardous growth enhancers, and heavy metals such as chromium and lead. While marijuana in any form may be prone to contamination, extracts and concentrates may present a greater risk because any contaminants will become concentrated during processing (Seltenrich, 2019). To protect consumers against exposure to pesticides, solvents, and other contaminants, marijuana and marijuana products must be tested to ensure they are safe for consumption.

Current testing requirements for adult use marijuana are intended to ensure that products for sale are safe and have accurate potency levels. However, Washington state adult use marijuana products are not currently required to be tested for pesticides. Although not prevented from doing so, many producers and processors do not test for pesticides, and Washington is the only state that does not require this testing. Based on a number of elements, including consumer concern and national best practices, it is evident that standardized testing for all marijuana products produced, processed, and sold in Washington State is necessary.

There is no product testing guidance available to the WSLCB or any other state agency regulating marijuana from federal agencies who set standards for agriculture, food, and other products because marijuana remains classified as a Schedule I drug, and federally illegal. This presents regulatory challenges to the WSLCB, regulators throughout the country, and the industry since there is limited funding to support research on how marijuana tainted with potential toxins affects humans. However, while the possible health impact of consuming marijuana products with unapproved pesticides is an emerging area of research, the overarching goal of the WSLCB is to protect public health and safety, and to assure that all products sold within the I-502 market are safe for all consumers.

SECTION 2:

Is a Significant Analysis required for this rule?

Under RCW 34.05.328(5)(a)(i), the WSLCB is not required to complete a significant analysis for this or any of its rules. However, RCW 34.05.328(5)(a)(ii) also provides that except as provided by applicable statute, significant analysis applies to any rule of any agency, if voluntarily made applicable by the agency.

The WSLCB voluntarily asserts that the proposed amendments to WAC 314-55-101 and WAC 314-55-102 meet the definition of legislatively significant as described in RCW 34.05.328(5)(c)(iii)(C) because they are rules other than procedural or interpretive rules that adopt new, or make significant amendments to, a policy or regulatory program.

For these reasons, the WSLCB voluntarily offers this significant analysis.

SECTION 3:

Clearly state in detail the general goals and specific objectives of the statute that the rule implements.

The proposed rules implement chapters 69.50 and 69.51A RCW. These chapters codified Initiative 502 (2013), known as I-502, and Second Substitute Senate Bill 5052 (Chapter 70, Laws of 2015), known as 2SSB 5052.

The stated objective of I-502 was to “stop treating adult marijuana use as a crime and try a new approach” to achieve three specific goals, one of which was to bring marijuana into a tightly regulated, state-licensed system similar to that for controlling alcohol.

Similarly, the stated objective of 2SSB 5052 was to regulate the use of medical marijuana, to achieve three specific goals, one of which was to establish consistent testing, labeling, and product standards.

The proposed rules implement the goals and objectives of chapters 69.50 and 69.51A RCW by revising and updating product standards for marijuana products produced, processed, and sold within the regulated Washington State system.

SECTION 4:

Explain how the department determined that the rule is needed to achieve these general goals and specific objectives. Analyze alternatives to rulemaking and the consequences of not adopting the rule.

The proposed rules realize and embody the intent I-502 and 2SSB 5052 by establishing appropriate, uniform marijuana product standards to assure all products available at retail are safe for human consumption, and that those products meet or exceed product purity standards. The proposed rules supplement the existing product standards for adult use marijuana products by requiring all marijuana products produced, processed, and sold in Washington State to be tested for pesticides, assuring quality and purity standardization of all marijuana products available to Washington State consumers.

Rules are needed to establish enforceable standards for processors and producers, and assure that marijuana testing labs are aligned with and understand product standards and testing requirements.

SECTION 5:

Explain how the agency determined that the probable benefits of the rule are greater than the probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented.

The proposed rules directly apply to licensed processors and producers who will bear the costs of additional testing requirements. Ultimately, however, consumers will bear the cost of these additional tests.

The proposed rules indirectly apply to accredited testing laboratories who will charge for, and conduct, testing of marijuana products.

It is important to note the distinction in the applicability of these proposed rules. The proposed rules do not change or alter the laboratory accreditation process, or revise any testing method development or validation processes labs may currently have in place. Marijuana testing labs in Washington State use varying business operating models, and each lab is responsible for, and independently choses, its own business model. While the proposed rules increase the required testing for marijuana products, they do not *require* testing labs to offer the full suite of tests. Marijuana testing labs have the *option* to offer all tests under the proposed rules. However, at this time, since the WSLCB's authority to regulate labs is limited solely to accreditation, whether or not labs offer all tests as proposed in these rules is a business decision borne solely by each lab, regardless of which agency administers an accreditation program.

Comparatively, the proposed rules will change marijuana product testing requirements as they apply to licensed processors and producers. As a result, the proposed rules are anticipated to have an initial cost impact on existing licensed processors and producers.

1. WAC 314-55-101 – Quality control sampling (formerly Quality assurance testing protocols)

Description of the proposed rule:

Originally entitled, “Quality assurance sampling protocols,” this section has been renamed “Quality control sampling.” This section describes how licensees collect samples of marijuana, usable marijuana, or marijuana infused products produced or processed by the licensee to accredited, independent third-party laboratories for inspection and testing to certify compliance with product quality control standards established by the WSLCB, consistent with RCW 69.50.348.

The proposed language has been updated and redesigned to increase readability, flow, and provide clarification, and because WAC 314-55-101 and WAC 314-55-102 are closely related, the WSLCB offers this analysis to transparently discuss and memorialize the agency’s reasoning on these proposed amendments.

Proposed revisions include:

- Clarifying current language around sample collection, storage, labelling, and transportation for product quality control;
- Clearly stating under what circumstances a lab must reject or fail a sample; and
- Increasing the maximum amount of marijuana flower that may be represented by a single I-502 panel of tests to up to fifty pounds based on a graduated scale; and
- Specifying the number of one-gram flower samples required for testing larger quantities of marijuana flower.

Certified labs may still retrieve samples from a marijuana licensee’s premise and transport those samples. Labs may no longer return any unused portion of the samples, and the proposal requires that labs must also destroy any unused portion of the samples as well. Additionally, language regarding sampling has been updated, simplified, and reorganized without substantive impact on current requirements.

Cost/Benefit Analysis:

The proposed rules reaffirm existing sample collection protocols designed to reduce product contamination during and after sample collection.

The proposal increases the maximum amount of marijuana flower that may be represented by a single I-502 panel of tests. No verifiable evidence or data was submitted to support the idea that a representative sample could be realized in larger lot sizes without increasing the number of samples, nor was there any consensus between any of the commenters regarding lot size before, during, or after these Listen and Learn session.

From one perspective, larger lot size eases regulatory burden and cost. Since sampled material cannot be sold, a large lot size decreases loss of unsellable marijuana. However, if there is a large amount of variation within an individual lot, and this is common with marijuana, a sample from within that lot might have drastically different properties than another part of the lot. If the sample does not pass testing requirements, then the entire lot must be destroyed, meaning that in the case of a fifty-pound lot, loss of the entire lot. While some large producers would be able to absorb this loss and remain viable, the same would not be true for other licensees subject to these rules.

Since marijuana is a highly variable crop, the lot size must recognize the unique makeup of a particular harvest. This adjusted lot size attempts to recognize the unique makeup of each harvest, while attempting to reduce variability, cost of testing, and potential loss across all tiers. However, collecting the correct amount and quality of product sample remains the responsibility of the licensee.

Under this proposal, sampling frequency may decrease, offering a cost reduction and an additional pathway to compliance. Licensees have the option to sample a lot of marijuana flower weighing up to fifty pounds for testing, but also may continue current practices since they are not precluded from continuing to sample five pound lots if this best fits their business model. This offers flexibility to adjust sample size to individual business model.

2. WAC 314-55-102 – Quality assurance and quality control (formerly Quality assurance testing)

Description of the proposed rule:

Originally entitled, “Quality assurance testing,” this section has been renamed “Quality assurance and quality control.” Previously, required quality control tests included five tests – moisture analysis, potency analysis, foreign matter screening, microbiological screening, and mycotoxin screening for most products. The proposed rules reaffirm these required tests, and add testing for pesticides. The proposed rule also allows the WSLCB to conduct randomized or investigation driven testing for heavy metals. Other changes to existing rules include updated and expanded information regarding testing levels and updated rule language regarding product retesting, remediation of failed lots, and referencing of samples to other labs for pesticide, mycotoxin, and optional heavy metal testing.

The WSLCB contracted with Industrial Economics through the Governor’s Office of Regulatory Innovation and Assistance (ORIA) in mid-2021 to perform a small business economic impact statement (SBEIS) under the framework of chapter 19.85 RCW for this particular section of rule. The SBEIS was drafted based on draft conceptual rules as well as on the best publicly available data at the time, and considers lot size increase and other revisions proposed in the CR 102. The best analogous industry types and

associated NAICS coding as of November, 2021 have been used for the calculations, and the SBEIS analyzes the rule proposal.

It is critical to understand the differences between what an SBEIS does and is required for, and what a cost/benefit analysis does and is required for under RCW 34.05.328. The WSLCB intends to provide educational opportunities to interested parties regarding each of the processes and their very different purposes in the future. The WSLCB encourages interested parties to review ORIA's frequently asked questions regarding SBEIS and significant analysis.

Analysis

A key objective of regulating marijuana is ensuring that products sold at retail are as safe as possible for consumption (Pacula, Kilmer, Wagenaar, Chaloupka & Caulkins, 2014). The use of pesticides on marijuana crops is a complex and often confusing issue for a range of stakeholders, including cultivators, regulators, retailers, labs, consumers, and public health researchers. While marijuana growers are interested in pest management to defend crops (referring to pest in the broadest sense), invertebrates, weeds, pathogens, and insects, regulators are concerned with pesticide management and reducing potential for risk to public health, particularly consumers and workers (Ehler, 2006). No pesticide is currently registered in the US specifically for marijuana (Stone, 2014; Thomas & ElSohly, 2016).

Like most crops grown in the United States, marijuana is vulnerable to pests. However, unlike most crops, the Environmental Protection agency (EPA) has not approved any pesticides for use on marijuana pants, and 28 U.S.C § 136j(a)(2)(G) dictates that a pesticide may not be used inconsistently with its labeling. Therefore, application of any pesticide not approved for general use on marijuana plants violates federal law. This leaves marijuana producers with the options of either (1) using no pesticides; (2) using pesticides that do not require EPA approval for use on crops; or (3) illegally using pesticides approved for other crops.

The toxicological effects of pesticides, heavy metals, mycotoxins, and pathogenic microbes is well-documented in literature, including their carcinogenicity, neurotoxicity, and teratogenicity (Bennett & Klich, 2003; Damalas & Eleftherohorinos, 2011; Denkhaus & Salnikow, 2002; Derbalah et al., 2019; Duruibe et al., 2007; Gargani et al.; 2011; Gud et al., 2018; Mostafalou & Abdollahi, 2013, 2017; Pham et al., 2010; Stone, 2014; Taylor et al., 1982; Ye et al, 2017). Exposure to these contaminants through consumption of marijuana products may lead to short- and long-term adverse effects. A number of pesticides have shown carcinogenic and mutagenic effects in humans and could be lethal when overdosed (Craven, Wawryk, Jiang, Liu & Li, 2019).

Of the 18 states that have legalized both medical and recreational marijuana, Washington is the only state that does not require pesticide and heavy metal testing for all product (Seltenrich, 2019; Taylor & Birkett, 2019; Feldman, 2015). Colorado, Oregon and California all require pesticide and heavy metal testing. States with only medical

marijuana programs, such as Michigan, Rhode Island, and Maryland require testing for solvents, microbiological contaminants, as well as pesticides and heavy metals.

Currently, Washington marijuana testing requirements are more stringent for products identified as DOH compliant than they are for products considered adult use. While adult use and DOH compliant marijuana must be tested for microbiological contaminants, only DOH compliant product is tested for pesticides and heavy metals.

WSLCB must consider the implications for how the legal adult use marijuana market may best be regulated in the public health interest. From that perspective, the basic issue with substances or activities that may pose risk of harm is the need to limit harm (Room & Ornberg, 2019). Considering the various methods of marijuana consumption, marijuana treated with pesticides likely present more health hazards to consumers than food crops or tobacco. Both acute and long term exposure to certain contaminants can result in a range of adverse health effects.

For example,

- Exposure to the insecticide bifenthrin, which is part of the pyrethrinoid family, may be a carcinogen and ingestion can cause headaches, vomiting, and respiratory irritation.
- Exposure to pyrethrins can cause difficulty breathing, vomiting and diarrhea when inhaled, and over prolonged periods may cause tissue damage in respiratory passages, and tremors.
- Microbiological contaminants, such as salmonella, can cause serious infections in people with weakened immune systems.

The best way to avoid pesticide consumption would be to guarantee that pesticides are not on marijuana plants at all. Commercial growers abroad have grown marijuana in large quantities using “biocontrols” such as predatory insects and beneficial microorganisms. However, in the United States, marijuana cannot be classified as “organic” because the term is federally regulated, and the United States Department of Agriculture (USDA) does not recognize marijuana as a legal crop.

While the current rules represent the WSLCB’s efforts to assure that marijuana testing factors in some of the known dangers of pesticides and solvents, the proposed rules add testing requirements for pesticides to protect public health and safety to the greatest extent possible. Existing language regarding remediation and retesting is reaffirmed and refined in the proposed rule text.

Cost/Benefit Analysis:

The WSLCB anticipates that these rules will not result in any additional administrative costs to licensees for the following reasons:

- Sampling practices and requirements are essentially the same. The WSLCB does not anticipate that these rules will result in additional employee time to deduct or handle samples;
- Administrative tasks, such as completing laboratory forms or documents, travel, or other costs associated with moving product to labs for testing are the same, and will not result in additional cost.

The WSLCB recognizes that these rules may result in additional operational costs to producers/processors, and has sought to mitigate those costs through increasing lot size, reducing the number of one-gram samples required for testing, and increasing the allowable canopy size for Tier 1 producers. However, product quality control testing is critical to ensuring that marijuana processed, produced, and sold in Washington State is free from harmful contaminants and safe for human consumption, regardless of the method by which that product is consumed.

As noted above, the use of pesticides on marijuana crops is complex, and no state "has it right" (Seltenrich, 2019). While producers are interested in pest management to defend crops (referring to pest in the widest sense as invertebrates, weeds, pathogens, and insects), regulators are interested in pesticide management and reducing possible risk to public health, and consumers in particular (Ehler, 2006; Subritzky, Pettigrew & Lenton, 2016). Also as noted above, no pesticide is currently registered in the US specifically for marijuana (Stone, 2014; Thomas & ElSohly, 2015). The WSLCB has an overarching responsibility to assure marijuana products are safe for human consumption. This proposal is a significant step toward assuring that all marijuana products produced and sold in Washington State meet stringent standards designed to protect the public health and safety.

More importantly, these revisions to quality control rules provide public benefit at a time when there are a wide variety of untested products both inside and outside the I-502 system. Assuring that all marijuana product aligns with stringent product quality standards supports efforts to increase consumer protection when it is most needed to align with ongoing statewide public safety and harm prevention efforts. WSLCB's mission is to promote public safety through trust and fair administration of enforcement of liquor, cannabis, tobacco, and vapor laws. This proposal not only promotes, but supports current public safety efforts by assuring that all product entering the I-502 marketplace is safe for human consumption when it is needed most. This greater public benefit of safe, appropriately tested marijuana product outweighs compliance costs.

SECTION 6:

Identify alternative versions of the rule that were considered, and explain how the agency determined that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated previously.

Rule Development and Stakeholder Engagement Process

The WSLCB's stakeholder engagement process encourages parties to:

- Identify burdensome areas of existing and proposed rules;
- Propose initial or draft rule changes; and
- Refine those changes.

Rule Project History

This project has a lengthy history of rule development and extensive stakeholder engagement. The first Listen and Learn session on draft conceptual rules was held in April 2019, and the second was held in August 2019. It is important to note that these two sessions on marijuana products were among the first that the WSLCB offered to increase and enrich stakeholder engagement in the rule development process.

Initially, and understandably, in person participation was somewhat guarded as the licensed community and others became familiar with the approach, and the concept of collaborative rule making. It is also important to note that few producers and processors attended the first meeting despite all licensees receiving notice of the meeting more than two weeks in advance. By the second session, attendees were better prepared to present and discuss ideas and solutions, and the conversation continued well beyond the scheduled session time, although again, few producers and processors attended in person even though messaging was broadly distributed to all licensees through several platforms. However, several of these entities provided written comments in the way of email to the rules coordinator during the meeting. These were shared at the meetings, and throughout the rule development process.

Additionally, agency staff visited the facilities of processors, producers, and labs who wished to participate in the process. To the extent possible, the qualitative and quantitative data presented in this significant analysis represent the multiple dimensions and broad spectrum of positions, as well as mitigation strategies offered by all participating parties. The WSLCB also coordinated rule development with staff the Washington State Department of Health, the Washington State Department of Ecology, and the Washington State Department of Agriculture where possible and appropriate.

Many of the comments received from licensees and labs focused on individual business viability. Very few comments received during the initial stakeholder engagement process prioritized public health and safety, concentrated on ways to increase product purity or consumer confidence, or tied the production of safe products to existing business models.

In contrast, the majority of the comments from consumers received after the CR101 was filed concentrated on a presumption of recreational product safety. For example,

> "*As a long time consumer, I was shocked to learn that pot is not tested for pesticides! I learned this from one of the budtenders I recently spoke to in Maple Valley, which was funny because every other budtender I've ever talked to has*

sworn up and down that pot IS tested for pesticides. However, this budtender seemed incredibly well informed and assured me that no, pot is NOT tested for pesticides in Washington. I realize you guys probably have a lot to do and focus on, but this seems like a no brainer to me. Why wouldn't we require pot to be tested for pesticides? Considering we are concentrating the pot and then combusting it, literally changing the chemical make up of the flower, it seems irresponsible to not require pesticide testing in the legal market for all pot products. As a consumer I want to know that the product I'm purchasing is safe and thus pesticide testing seems immenat [sic]. Please do the right thing, make haste, and require mandatory pesticide testing for all legal pot products now!"

- *Received in WSLCB rules in-box, September 14, 2018*

In all, well over 350 comments were received, organized, and reviewed as part of initial development efforts. These became a part of the original CR 102 package for this project.

The Board approved the first CR 102 for this project on January 22, 2020, setting a public hearing for March 18, 2020. However, this hearing was continued based on the status of the COVID-19 outbreak and the agency transferring operations to an all-virtual and remote platform that at the time, did not offer a way to hold a public hearing. The hearing was continued, but as the pandemic surged, the Board withdrew the CR 102 on the premise that it would re-file once an appropriate platform was available. On May 27, 2020, the Board approved re-filing of the original CR 102, setting a hearing date for July 8, 2020.

The hearing was held on July 8, 2020, and based on substantive feedback resulting in substantive changes to the proposal, the Board approved a supplemental CR 102 on September 20, 2020 with a hearing date of November 18, 2020. Following this hearing, the Board reviewed all feedback, and determined that a new approach was necessary.

To assure that the agency understood and heard from the complete system – processors, producers, retailers, consumers, and others – and provide an opportunity for all in the supply chain to have an opportunity to hear the wide range of perspectives around product testing, the WSLCB hosted three Deliberative Dialogue sessions on marijuana product testing in January and February 2021. These sessions were used to inform the development of new draft conceptual rules.

Current Rule Proposal

A Listen and Learn session on the new draft conceptual rules on October 20, 2021. . These sessions were announced via GovDelivery and other media platforms, and open to the public, licensees, and any interested party to encourage community input. The WSLCB is aware that this is a topic of interest to many Washington State citizens, regardless of their positionality related to the regulatory structure.

The WSLCB received a number of written and oral comments during and after the Listen and Learn session held on October 20, 2021 on a conceptual draft of this proposal. Comments continued to be offered through November 2021. These comments did not embody or represent broad licensee or lab agreement on any specific theme or themes. These comments concerned sample collection, lot size, increased cost to producers and processors, along with comments that did not pertain to this section of rule.

Organizing comments to provide brief descriptions of issues and themes related to the proposed rule set in this context continues to be challenging because of the number of comments collected as a result of the Listen and Learn session. These comments represent a broad range of opinions and positions, along with several suggestions regarding draft conceptual rules. As a result, thematic organization is difficult.

Agency staff worked to preserve comments in their native form to assure not only transparency, but to make sure that each commenter was offered the opportunity to review and digest comments and thoughts of the entire community in their native form, as opposed to a curated, summarized version of comments interpreted by the WSLCB. The WSLCB intends to continue sharing comments in their native form.

Some of the suggestions included rule changes that exceed the scope of the CR101 for this project, or internal operational changes that may exceed WSLCB available funding and capacity. Suggestions included the following examples:

- “With current pesticide testing I find that a product is tested way too many times. Processors want product tested, and then they test again. Right now this industry has adopted a very costly approach to testing, and this rulemaking seems to continue that trend. I really hope that we get pesticide testing that is not overly burdensome to farmers and protects consumers. Self selection testing at the lot level does not achieve this.”

- “This was an unexpected, dramatic and seemingly arbitrary proposal in testing requirements. Labs currently test 6 grams out of every 2,240 grams sold (5lb lot). According to these conceptual rules, labs will still test 6 grams regardless if the lot is 2,240 grams (5 pounds) or nearly 22,400 grams (50 pound lot). Clearly, meaningfulness of the results from that single battery of tests significantly decreases as the lot size grows.

  While we can appreciate a desire to decrease a financial burden on producers and processors, reducing the current testing frequency does not appear to coincide with LCB mandate of public safety. Current testing costs are minimal when compared to overall costs involved, e.g., 8 cents per gram at our facility per 5 pounds.

In addition, we are unaware of any grower or processor having indicated that current testing requirements are burdensome, either during the meeting or elsewhere. To the contrary, several comments by growers during the meeting indicated concern regarding decreasing validity with increasing lot sizes and corresponding risks involved with potential failures of larger lot sizes.

Accordingly, we agree with the commenters that support the current rules involving 5 pound lots. The pending economic impact analysis may indicate the costs involved in pesticide testing are onerous. If so, requirements should be addressed as a separate matter with larger lot sizes allowed for pesticide testing specifically, leaving other testing requirements at 5lbs."

- "The proposed rule change will also tend to push smaller growers toward unicropping (growing lower numbers of strains). That is not necessarily a good thing."

- "We grow 8 strains in a small room, and cannot afford to have 8 pesticide tests each harvest. I think pesticide testing should also be done randomly on samples obtained from retail stores."

- "We harvest one strain at a time and we pesticide every 5 pounds. It costs us less than a penny per gram for pesticide testing. At $200 a pesticide test, for a five pound lot, which is the most expensive I've seen on lab websites (and you can usually get a better deal if you stick to one lab and don't have any analytes for them to analyze...ie pesticide free) that would be $.088 per gram. Just throwing some numbers out there."

- "In that case - we need 2 types of testing lots - 5lb by strain for regular QC (no changes) And harvest level testing by crop for pesticides Follow up with random off the store shelves testing to keep it all honest."

- Samples must be of roughly equal weight not less than one gram each. Each sample must be deducted from a harvest as defined in WAC 314-55-010(14). Why? Why do they need to NOT be less than 1 gram? That seems arbitrary. If you're sending in a lot of B buds, 1 gram bugs may not be a representative sample. Furthermore, I think it is important to include a timeline with the definition of harvest in WAC 314-55-010(14). Otherwise it's easy to say that a harvest could be 1 day or a month or a perpetual harvest means you only need one test.

- “For compliance I would say the board “shall” conduct rather than “may”. I really think the board is obligated to conduct random investigation on a heavy metal screening. We must conduct random screening at the store level. So I would suggest changing may to must or shall.”

- “Potency analysis isn't an accurate term. THC and CBD do not by themselves indicate potency to the consumer or patient. Cannabinoid concentration is a better, more accurate term. After all of this Delta 8 hoopla (that's a technical term), I think we have learned the importance of using the correct terminology. This is an opportunity to adjust our vernacular before it's a problem.”

- “Pesticide failures may not be remediated. Why? This should be allowed with board approval as the science continues to evolve. At least give the option...”

- “If a failed quantity of marijuana is not remediated or reprocessed in any way, it cannot be retested. Any subsequent certificates of analysis produced without remediation or reprocessing of the failed quantity of marijuana will not supersede the original compliance testing certificate of analysis. Again why?“

- “I feel that (a) should be more clear and the industry should not have to go to the board for approval. Rule should clearly show when product is remediable.”

- “I'd like to see some sort of synthetic testing added to quality assurance.”

- “Please include a requirement for a unique Sample ID for every sample. A unique sample ID is absolutely necessary to identify all samples submitted to a lab.”

Comments Received During and After the Listen and Learn Session held October 20, 2021

- See Attachment A.

Alternative Versions of the Rule and Least Burdensome Alternative

One versions of draft conceptual rules were offered for stakeholder comment at the Listen and Learn Session. Several stakeholders offered alternative language, or specific suggested revisions. Most comments were general concepts about rule revision rather than actual rule language, complaints regarding current rule, or assertions that WSLCB

failed to appropriately develop rules, draft and vet draft conceptual rules, research, or understand the issue. As noted above, most comments spoke to the perceived effect a rule revision would have on businesses.

Summarized below are brief descriptions of issues related to the proposed rule set and how the agency collaborated with stakeholders to mitigate potential burden associated with rule compliance:

Issue	Potential Burden	Mitigation Strategy
Lot size	**Producer/Processor**: General consensus that lot size increase would decrease burden and reduce costs; others asserted that lot size should remain the same to assure a truly representative sample.	Proposal to increase the maximum amount of marijuana flower that may be represented by a single I-502 panel of tests to fifty pounds, with the number of samples required based on the weight of the marijuana flower being tested.
Addition of pesticide testing and random or investigation driven heavy metal testing to current suite of required I-502 tests	**Producer/Processor**: No consensus on whether this would increase or decrease burden. Some indicate, as they did in 2016, that additional tests will reduce business viability; others agreed that testing was necessary.	Proposal maintains addition of pesticide testing. Heavy metals testing will not be mandatory for adult use product, but WSLCB will conduct random heavy metal testing. Licensees have the option to test for heavy metals consistent with DOH compliant product standards.

SECTION 7:

Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.

The rule does not require those to whom it applies to take action that violates requirements of federal or state law.

SECTION 8:

Determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.

The rule does not impose more stringent performance requirements on private entities than on public entities.

SECTION 9:

Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter and, if so, determine that the difference is

justified by an explicit state statute or by substantial evidence that the difference is necessary.

The rule does not differ from any applicable federal regulation or statute.

SECTION 10:

Demonstrate that the rule has been coordinated, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.

The agency coordinated to the extent possible with the Department of Health, the Washington State Department of Ecology and the Washington State Department of Agriculture.

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Attachment A
Public Comment Table
Topic: Conceptual Draft Rules for Cannabis Quality Control Testing

Background: A virtual Listen & Learn session on conceptual draft rules on marijuana quality control testing was held on October 20, 2021 via Microsoft Teams. A public invitation was shared through GovDelivery on October 6, 2021. Approximately 55 people attended. The table below includes the comments received verbally or in the chat messages during the event, and written comments on the conceptual draft rules. The comments are not necessarily listed in the order received. Comments have been received through November 2021.

Name	Theme	Comment
Jim MacRae	314-55-101 Title of Section	Chat comment received during Listen and Learn forum: I like the use of "must". I do not like the change of terminology from "Quality Assurance" to "Quality Control". Please change all references in this ruleset that say Quality Control back to their original wording of Quality Assurance. Thank-you
Jim MacRae	Deletion of 314-55-101(6)	Chat comment received during Listen and Learn forum: I do not agree with deleting this section. The ability to REVOKE the license and/or certification of any business engaged in "defrauding" quality assurance procedures and, hence, consumers (let alone downstream licensees purchasing the "fraudulent" product should be retained. Please remember that quality often equates to SAFETY. Intentionally putting consumers at risk should be a revocable infraction.
Travis	Sampling	Chat comment received during Listen and Learn forum: Why do we need so many samples per lot?
Danielle Rosellison	Sampling protocols	Chat comment received during Listen and Learn forum: So if you have 50 pounds, you need 19 samples but 1 test. That is my understanding from my communication with the LCB.
Jim MacRae	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: 101(3) I do not like the increase in lot size. Has the work provided to the LCB in 2018 which showed a strong differential impact on smaller growers been incorporated in this draft? Larger lots in no way contribute to increased consumer protection.
Jim MacRae	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: 101(3) part 2 --- The proposed rule change will also tend to push smaller growers toward unicropping (growing lower numbers of strains). That is not necessarily a good thing.

Attachment A
Public Comment Table
Topic: Conceptual Draft Rules for Cannabis Quality Control Testing

Luke	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: My comments echoed for the most part what Danielle had to say. I have concern about the limit of lots defined in 314-55-010 (20,a/b) still remaining at 5lbs for flower and 15lbs for other products. If we are going to increase lot size I believe we should amend the definition of "lot" to reflect the proposed larger quantities in this section of rule.
Travis	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: I agree with the by strain comment from Shawn - We harvest 30-50lbs a week, 2-3 strains at a time
Jim Cheatle	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: I also agree with the strain comment by Shawn, We grow 8 strains in a small room, and cannot afford to have 8 pesticide tests each harvest. I think pesticide testing should also be done randomly on samples obtained from retail stores.
Danielle Rosellison	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: We harvest one strain at a time and we pesticide every 5 pounds. It costs us less than a penny per gram for pesticide testing. At $200 a pesticide test, for a five pound lot, which is the most expensive I've seen on lab websites (and you can ususally gt a better deal if you stick to one lab and don't have any analytes for them to anazlye...ie pesticide free) that would be $.088 per gram. Just throwing some numbers out there...
Shawn DeNae	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: In that case - we need 2 types of testing lots - 5lb by strain for regular QC (no changes) And harvest level testing by crop for pesticides Follow up with random off the store shelves testing to keep it all honest.
Marcos Harris	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: Is there another place I should be looking explaining these pound breakdowns and the testing being referred to? Are these dry weights or wet weights?
Steven McCombs	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: Seems like if samples are taken by the producer, there is much room for cheating the system. Any body else agree?
Jeremy Moberg	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: During the last cr102 the LCB received many comments that self selection was not a valid way to test for pesticides, and that testing should be conducted at different levels. Current testing is fine for THC and mycotoxins and Farm level testing for pesticides conducted by labs/WSDA
Shawn DeNae	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum:

		Point on target, Steven M. Cheaters will cheat so random testing from stores by 3rd party (LCB, WSDA) is the only way to keep self selection honest.
Danielle Rosellison	314-55-101(3) Sampling protocols	Chat comment received during Listen and Learn forum: Per WAC 314-55-101, sampling is required by law RCW 69.50.348 which states "every licensed marijuana producer and processor must submit representative samples of marijuana, useable marijuana, or marijuana-infused products produced or processed by the licensee to an independent, third-party testing laboratory meeting the accreditation requirements established by the state liquor and cannabis board, for inspection and testing to certify compliance with quality assurance and product standards adopted by the state liquor and cannabis board under RCW 69.50.342." By law, p/p have to "submit" the samples. Not sure if self sampling is allowed on law, which makes it not a LCB issue, but rather a legislative issue.
Danielle Rosellison	Sample collection	Verbal comment received during Listen and Learn forum: “So basically what it says is samples must be of roughly equal weight not less than one gram each. Each sample must be deducted from a harvest as defined in WAC 314-5510.”
Danielle Rosellison	Sample collection	Verbal comment received during Listen and Learn forum: "Great my question my biggest question is why, why do they need to be not less than one gram sometimes you might have a lot of be buds? Where none of them are one gram so requiring them to be one gram might be countered counterintuitive to making the samples indicative about lot, so I would suggest just removing the section that says not less than one gram each. So instead it finishes samples must be of roughly equal weight. Each sample must be deducted from a harvest as defined in the WAC.
Shawn DeNae	Sample collection	Verbal comment received during Listen and Learn forum: And this may have been back in section one, but it's saying samples need to be taken, according to and it refers to the WAC. I assume that's the WAC that says that you need to divide your lot up into 4 quadrants and take it from each 4 quadrants right.
Shawn DeNae	Sample collection	Verbal comment received during Listen and Learn forum: Talking about the weighing 10 pounds or more in 20 pounds and how many samples need to be taken and or marijuana flower weighing 10 pounds or more. I'd suggest that say marijuana flower harvests. Totaling 10 pounds or more my the my comment based is based on the fact that flower lots are by strain. And and we really need to lift that by stream. A type of mentality so that so that harvest that happen in a in a truncated timeframe. Let's say in a day or 2 that are taken from a truncated area. You know say a flower room of a field of greenhouse that all of that material. No matter how many strains are in that harvested material need one pesticide test. For example, when we uh we were the first flower company to voluntarily test for Department of Health Department of Health doesn't have any limits per per test per strain. You can harvest 3 pounds or 30 pounds or

		300 pounds or more and get one test per strain that surreal onerous burden. Some way to do it. For those of us that grow multiple strains in a single area and harvest them. At a single time so for example, we, we harvest 8 strains every single harvest under this proposal. It would require us to have 8 strains for that contained area rather than R 8 tests for that contained area rather than one test. So I'd like to really look at that by strain because that would that would cost our our company in additional $45,000.00 a year to do it this way. And so I'd like to put in the suggestion that we take out this take out the testing by strain no matter how much the harvest is by that strain does that makes sense. Potency test you know THC CBD microbes, and all of that differently. I'm fine with keeping that at 5 pound lots. But when you go to the pesticide testing. We need to expand that so that it doesn't burden those of us that grow and harvest several crops at the same several strains at the same time. So I'll leave it like at that for now, thanks.
Danielle Rosellison	Sample collection	<u>Verbal comment received during Listen and Learn forum:</u> Awesome. Thank you so much sorry for jumping the gun earlier. One of the things that actually was touched on in 101. Dot, 3, A is referencing harvest, which is in the definitions. In 5501014 and the definition of harvest means that the marijuana plant material derived from plants of the same strain that were cultivated at the same license location and gathered at the same time, and I think we need to have a timeline around harvest. Uh if you are perpetually harvesting you could just say that you're harvesting all the time and need one strain or you need one test for the entire thing. So I think from creative entrepreneurial standpoint, you might wanna add a timeline for that now, what that timeline means I have no idea. We harvest in the day as an indoor grower once trained in a day. If I'm an outdoor grow a son grower. I have no idea they might be doing a strain in a week, so that has to be thought about as well. It looks like that there are these are samples like there's different numbers of samples and then it's one test correct. So the the samples are increasing based on poundage, but it's one test that is needed is that an accurate statement. 101 dot 3 bcdef makes it look like reads to me that it's 8 samples have to be taken will be for 10 pounds, but it's one test that is being tested were only paying for one test is that an accurate statement. OK, so my all that sounds fantastic because then I'm not going to have a room with multiple different tests. It'll be better for retailers. It'll be better for producer processors. It'll be better for consumers. My question is what happens after 50 pounds. Uh for us or our rooms will do one strain per harvest and we're going to see anywhere from 50 to 75 pounds. It be kind of silly to have 2 tests for that. Last you know 5 pounds or 25 pounds or whatnot. So I would include a in 101. Dot, 3, FG, I guess it would be that for each additional 10 pounds of marijuana flower. An additional sample must be taken. And I added just one sample because from going from you know 18, you went from 18 to 19. I'm not I couldn't figure out your math as to why you picked these arbitrary number of samples per pounded.

		But going from from 30 to 40 pounds and then 40 or 50 was one extra test. So I think every time one extra sample for over 50 pounds 'cause that makes sense.
Shawn DeNae	Sample collection	Verbal comment received during Listen and Learn forum: Thank you. Yeah, I'm I was trying to find the uh, though WAC that Danielle Rose Ellison referred to when she read. I thought she said 55101414 but I can't find that where the definition of lot meant by strain and so for pesticide testing. If we can just change the definition and take out by strain, then I'm I'm good with it. Uhm another another comment was when we were taking samples for Department of Health rules for general use compliant. You know they're based kind of like on this and the larger the harvest size, the more. Uh samples you sent in and I got feedback early on that the labs were like. Please do not send me all this marijuana. I don't need but I think it was 2 to 4 grams, something like that. A very small amount and you know they begged me not to send them all that all that because then you know they have to go through processes of of getting rid of it and you know, so I just am curious if the labs are still. Feeling that way or if they want to take on you know, so much samples to do this pesticide testing. Uhm and then I'm also not clear and maybe you can answer this right away. Is is this suggesting this. This testing protocol, suggesting just for pesticide testing and then the the other QC testing would be by 5 pound lot or is it can is it proposing that all testing now go to this to this heavier lot sizes and sampling Uhm well, yeah, it in that case, I mean, 'cause Here here. We are with 5 pound lots and sending in you know, sending in 4 different samples on 5 pound lights and we all agreed that that even that does not reflect. Accuracy throughout that 5 pounds, uhm, you know it's been shown over and over that that. That the Flowers that grow to the top of the canopy tend to have more THC or cannabinoids profile and as you go down the plant. They have lesser and lesser so. So when you're taking these samples and we get a CVV number that's you know. Point to the point is you know XXX. And that still doesn't properly reflect all of the flower that the consumer is going to have in that lot there's just no way. And that all the flower will be to that precise THC number and so. We really need to work on. In. Ranges of THC rather than to precise numbers, especially if we move to a much larger lot sizes for that because it's it. Just wouldn't be accurate on the label and you know, we're all striving to have accuracy in our in our labeling and so, if we move to a range of THC that will do several things. It'll be more accurate on the label it will not encourage high THC. Uhm.

		Overconsumption UM and dumb. Well, I guess my point is is it'll it'll be more accurate. If we move to a range of THC is rather than a static number no matter if we take it from a 5 pound lot or 20 or 50. So that's my follow up.
Shawn DeNae	3rd party sampling	Verbal comment received during Listen and Learn forum: Uh all right, I'll just I'll just read what I've I've put out some people have said that you know, we need for self selection is very suspect. I mean, there's just all sorts of ways to Sunday to to cheat around that and so you know the only way to really keep the finished products. Uhm as clean as possible is to do random off the shelf testing from product that's available for consumers in stores done by a 3rd party. Whether that's the LCB during you know compliance checks or whether that's WSDA but. I'm self selection is is it's just a real. Hit and miss way to make sure that our our products are safe. The only way to do. It is from finished product off the shelves so I agree with everybody on the chat form that's suggested that.
Danielle Rosellison	Sample collection	Comment received by email: WAC 314-55-101.2(a) All samples must be deducted, stored, and transported in a way that prevents contamination and degradation. This is great and much better than it was origianlly. N/A
Danielle Rosellison	Sample collection	Comment received by email: WAC 314-55-101.3(a) Samples must be of roughly equal weight not less than one gram each. Each sample must be deducted from a harvest as defined in WAC 314-55-010(14). Why? Why do they need to NOT be less than 1 gram? That seems arbitrary. If you're sending in a lot of B buds, 1 gram bugs may not be a representative sample. Furthermore, I think it is important to include a timeline with the definition of harvest in WAC 314-55-010(14). Otherwise it's easy to say that a harvest could be 1 day or a month or a perpetual harvest means you only need one test. Samples must be of roughly equal weight not less than one gram each. Each sample must be deducted from a harvest as defined in WAC 314-55-010(14).
Danielle Rosellison	Sample collection	Comment received by email: WAC 314-55-101.3(b) "For marijuana flower weighing up to 10 pounds, a minimum of 8 samples must be taken. " This is taking a sample for every 1.25 pounds. QUESTION: Is this 8 samples, homogenized into one test? Or is this 8 samples and 8 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former.

Attachment A
Public Comment Table
Topic: Conceptual Draft Rules for Cannabis Quality Control Testing

Danielle Rosellison	Sample collection	Comment received by email: WAC 314-55-101.3(c) For marijuana flower weighing 10 pounds or more but less than 20 pounds, a minimum of 12 samples must be taken. This is taking a sample for every 1.6 pounds. QUESTION: Is this 12 samples, homogenized into one test? Or is this 12 samples and 12 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former.
Danielle Rosellison	Sample collection	Comment received by email: WAC 314-55-101.3(d) For marijuana flower weighing 20 pounds or more but less than 30 pounds, a minimum of 15 samples must be taken. This is taking a sample for every 2 pounds. QUESTION: Is this 15 samples, homogenized into one test? Or is this 15 samples and 15 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former.
Danielle Rosellison	Sample collection	Comment received by email: WAC 314-55-101.3(e) For marijuana flower weighing 30 pounds or more but less than 40 pounds, a minimum of 18 samples must be taken. This is taking a sample for every 2.2 pounds. QUESTION: Is this 18 samples, homogenized into one test? Or is this 18 samples and 18 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former.
Nick Mosely	Sampling	Comment received by email: Representative samples. Comment was provided by several attendees to the effect that increasing population size without a corresponding increase in number of individually measured samples decreases statistical confidence in the results. ○ Pursuant t o t his recommendation, WAC 314-55-101 subsection 3 has been edited to continue the current paradigm of one sample per 5 lb lot, with t he exception of the pesticide screening, as described above.
Nick Mosely	Sample size	Comment received by email: Sample size. Comment was provided by several attendees that sample sizes need not exceed 4 grams, as the l abs do not require larger samples and no rule was provided f or homogenization of larger samples. ○ Pursuant t o t his recommendation, WAC 314-55-101 subsection 3 has been edited to continue the current paradigm of one 4 gram sample per lot (minimum). ○ Additional comment was provided that some lots of marijuana f lower contain pieces smaller than 1 gram which could make compliance with the sampling requirements of WAC 314-55-101 subsection 3 difficult. An edit has been provided to that section clarifying that each deduction may consist of more than one piece but must not be less than one gram.
Holly Lorentson	Sample collection	Comment received by email:

		Lot Size should also be required to be labelled on the sample. Otherwise, how will labs know if the proper amount of sample is provided.
Holly Lorentson	Sample collection	Comment received by email: Is the expectation that the lab is to grind and homogenize the entire sample quantity? The new rules also say that we are supposed to receive and test sample "as is". Please provide guidance. The sample size for the larger lots is too large to get an accurate result for microbial and mycotoxin due to microbial and mycotoxins not necessarily being dispersed evenly throughout an entire lot. Has an economic impact study been performed on behalf of the laboratories? The new lot size requirement potentially reduces the samples to be tested by the laboratories by a factor of 10.
Holly Lorentson	Sample size	Comment received by email: Are the expectations that the lab weighs each flower and verifies the weight and number of 1g flowers and that both the weight of each flower and the number of flowers meet the minimum lot size sampling requirements? Is the lab required to reject samples that do not exactly meet the sample criteria listed per each lot? Example 1. 50-pound lot. 17 one-gram flowers and one 0.5-gram flower. Example 2. 50-pound lot. Nine one-gram flowers and nine 0.75-gram flowers. Example 3. 50-pound lot. 15 one-gram flowers. Example 4 50-pound lot. Nine two-gram flowers. Example 5 50-pound lot. One Hundred 0.20-gram flowers.
Holly Lorentson	Sample collection	Comment received by email: Some producers send in "popcorn" style samples (very small buds). Does this type of sample need to be rejected? Even if it meets weight requirement for the lot. If the expectation is that some leeway will be allowed, please do not write the lot size sampling requirement so specifically.
Jim MacRae	Lot sizes	Chat comment received during Listen and Learn forum: Re: Shawn's comment --- the study in question was not commissioned by the WSLCB. I pulled the data on flower lot sizes on behalf of the Lab Guild and those data were shared with the agency early in this rule process (2018 or so). It showed clearly that smaller farms would be differentially disadvantaged by increases in lot size.
Shawn DeNae	Lot sizes	Verbal comment received during Listen and Learn forum: Hi, this is kinda outside this section, so I apologize but I do want to point to a a study that the LCB commissioned. Uh back in Bo Tech days, UM that showed that of all the tears that produce flower lots weighing less than 5 pounds. At that time, 72% of what tier ones harvested were less than 5 pound lots. 52% of Tier 2 harvests were less than 5 pound lots and on tier threes. It was 32.4% of their harvests were less than 5 pound lots and so it's very clear that most of us harvest, it less than 5 pound lots certainly less than 10 pound lots.

		And so, if we if we put this testing to raise. A lot sizes for all testing, UM that's gonna really hurt the small craft. Farmers those of us that harvest several strains per crop, and harvest at certainly less than 5 less than 10 pound levels. And so I just want to underline that again on that. The basis of this ruleset basing on lots by strain for pesticide testing is not scientifically based and it's very financially detrimental to to many of us. So I'll leave it at that.
Matt Heist Robert Haddad	Sample collection, lot sizes, pesticide testing	Comment received by email: Hello, Thank you for hosting the session on Cannabis Testing and discussing the draft conceptual rules. We have the following comments with regards to that discussion. WAC 314-55-101 Sec. 1 part C: Please include a requirement for a unique Sample ID for every sample • Comments: A unique sample ID is absolutely necessary to identify all samples submitted to a lab. WAC 314-55101 Sec. 3 part B: (Changing the lot size) • Comments: This was an unexpected, dramatic and seemingly arbitrary proposal in testing requirements. Labs currently test 6 grams out of every 2,240 grams sold (5lb lot). According to these conceptual rules, labs will still test 6 grams regardless if the lot is 2,240 grams (5 pounds) or nearly 22,400 grams (50 pound lot). Clearly, meaningfulness of the results from that single battery of tests significantly decreases as the lot size grows. While we can appreciate a desire to decrease a financial burden on producers and processors, reducing the current testing frequency does not appear to coincide with LCB mandate of public safety. Current testing costs are minimal when compared to overall costs involved, e.g., 8 cents per gram at our facility per 5 pounds. In addition, we are unaware of any grower or processor having indicated that current testing requirements are burdensome, either during the meeting or elsewhere. To the contrary, several comments by growers during the meeting indicated concern regarding decreasing validity with increasing lot sizes and corresponding risks involved with potential failures of larger lot sizes. Accordingly, we agree with the commenters that support the current rules involving 5 pound lots. The pending economic impact analysis may indicate the costs involved in pesticide testing are onerous. If so, requirements should be addressed as a separate matter with larger lot sizes allowed for pesticide testing specifically, leaving other testing requirements at 5lbs. Thank you for your time,
Matt Heist	Transporting samples	Comment received by email: Hello, We would like to offer another comment on this section of the draft rules: WAC 314-55-101:

		(4) Sample retrieval and transportation. Certified labs may retrieve samples from a marijuana licensee's licensed premises and transport the samples directly to the lab. We agree with the language of this section which leaves it optional for labs to retrieve samples and not make it mandatory which would significantly increase the cost of QA testing to the producer/processor.
Holly Lorentson	Sample transport	Comment received by email: Does this prohibit third party transportation services?
Holly Lorentson		Comment received by email: "Certified labs must record an acknowledgment of the receipt of samples from producers or processors. Certified labs must also verify if any unused portion of the sample is destroyed after the completion of required testing." This should state that the "Certified labs must also verify when any unused portion of the sample is destroyed after the completion of required testing." This section should outline a timeline for labs to dispose of samples after testing. I would suggest 3 months.
Danielle Rosellison	Harvest testing	Comment received by email: WAC 314-55-101.3(f) For marijuana flower weighing 40 pounds or more but not more than 50 pounds, a minimum of 19 samples must be taken. This is taking a sample for every 2.6 pounds. QUESTION: Is this 19 samples, homogenized into one test? Or is this 19 samples and 19 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former. What happens after 50 pounds? I would recommend continuing this upward. For example, we harvest a room which is 50-75 pounds in a day. Does that mean we woul dneed two seperate tests for one room? That's going to cause problems for labelling, selling, ect. This can be address if we continue this pattern. If we define harvest, and decide what's the most that can be harvested in a "harvest" (I used "one day above), then we should get up to at least that amount in the sampling procedure. For each additional ten pounds of marijuana flower, an additional sample must be taken.
Nick Mosely	Moisture / water testing	Comment received by email: Moisture content i s a redundant test, impossible to standardize without dramatically increasing cost, and providing little value. For these reasons, and as documented in t he public record at CSTF Steering Committee Meetings, the chemical work group has recommended removing the moisture content test from the product standards rules. The water activity test is more than sufficient for monitoring moisture, is a better indicator of shelf stability, and it is impossible for a marijuana flower sample to f ail the moisture content test while also passing the water activity t est. ○ Pursuant t o t his recommendation, WAC 314-55-102 subsection 3b has been amended to remove moisture content as a requirement.

Attachment A
Public Comment Table
Topic: Conceptual Draft Rules for Cannabis Quality Control Testing

Shawn DeNae	Potency / Cannabinoid concentration	Verbal comment received during Listen and Learn forum: Hi yeah, this seems to be the section in. Through A&B, Here that demands that there was one static number for THC and CBD. Potency level ERP or percentage level and here's where I would like to suggest that we make this a range rather than a static number, it for free accuracy based on my previous comments. We really do need arrange to better represent. What's in that lot no matter what? How many pounds a lot is early on when we did testing from Flowers to the top of the planet in middle of the plant to the bottom flat. There was easily, a 6 percentage variance on the same plant. And so the science is out there, I mean, it's it's real and so for us to put a static number to represent a several pound lot is just inaccurate. It's just not. It doesn't disclose everything to the consumer that I think they'd like to know. OK, well, thank you. Thank you that's good. And do you have anything else right now? Uh I've got some suggestions you know, I mean right now because of this teach C requirement on the label. The the market has really gone to a high THC for the lowest price kind of driver and so by giving a giving a range you know, let's say less than 10% THC, you know, there's people out there that. Don't want high THC and you know say 10 to 15%, 15 to 1920 to 24 and above 24. You know, I mean, something like that. I think that would be more accurate and it could easily be. Be determined based on an average of 3 consecutive tests and. And again be more informative on the label to the consumer.
Danielle Rosellison	Potency / cannabinoid concertation	<u>Comment received by email:</u> WAC 314-55-102. 1(a) (ii) Potency analysis; Potency analysis isn't an accurate term. THC and CBD do not by themselves indicate potency to the consumer or patient. Cannabinoid concentration is a better, more accurate term. After all of this Delta 8 hoopla (that's a technical term), I think we have learned the importance of using the correct terminology. This is an opportunity to adjust our vernacular before it's a problem. Potency analysis Cannabinoid concentration analysis;
Danielle Rosellison	Potency / cannabinoid concertation	<u>Comment received by email:</u> WAC 314-55-102.3(a)Cannabinoid concentration analysis. Look!! You already did it!! Just need to use the same verbiage in 314.55.102.1.a.ii N/A
Danielle Rosellison	Potency / cannabinoid concertation	<u>Comment received by email:</u> WAC 314-55-102.3(a)(iii) (iii) Regardless of analytical equipment or methodology, certified labs must accurately measure and report the acidic (THCA and CBDA) and neutral (THC and CBD) forms of the cannabinoids. Should we put a numeric value in here? Like to at least the tenth or hundredth place? That way we aren't penalizing companies that have more sensative equipment than other companies? (iii)

		Regardless of analytical equipment or methodology, certified labs must accurately measure and report the acidic (THCA and CBDA) and neutral (THC and CBD) forms of the cannabinoids to at least the tenth decimal place.
Nick Mosely	Potency / Cannabinoid concentration	Comment received by email: Cannabinoid concentration results should be rounded t o t wo significant figures after any relevant calculations and before labeling packages for retail sale. This is consistent with other amendments already made in the conceptual draft rules, wherein all of the limit tests have been reduced to two significant figures, and is consistent with CSTF recommendations. ○ Pursuant t o t his recommendation, WAC 314-55-102 subsection 3a has been edited to require rounding of results prior to labeling and after all calculations are complete. ○ Similarly, the t able i n WAC 314-55-102 3f has been edited i n t wo places to maintain a consistent 2 significant figures.
Nick Mosely	Potency / Cannabinoid concentration	Comment received by email: To maintain consistency with WAC 314-55-102 subsection 3a "Cannabinoid concentration analysis," the term "potency" has been replaced with "cannabinoid concentration" throughout the document.
Travis	Pesticide testing	Chat comment received during Listen and Learn forum: If we have a clean pesticide test, will we still need to put our pesticides on the label, or will a simple "pesticide tested" work?
Travis	Pesticide test	Chat comment received during Listen and Learn forum: We use BioMarone products (Regalia, Grandevo, and Venerate) all are. We also use clonex which is listed as a pesticide for some reason. This is a lot to throw on the label, and I don't see much use for it after the new testing is implemented.
[Jeremy Moberg	Pesticide test	Chat comment received during Listen and Learn forum: I would like to hear why the LCB did not consider broadening the current randon farm level testing regime conducted in cooperation with the WSDA?
Jeremy Moberg	Pesticide test	Chat comment received during Listen and Learn forum: There is no current requirement to put pesticides on the label, it is required in accompanying materials
Shawn DeNae	Pesticide testing	Chat comment received during Listen and Learn forum: There has been A LOT of history on this topic yet here we still are with lot by strain level testing. May we submit past white paper info on this topic?

Jeremy Moberg	Pesticide testing	Chat comment received during Listen and Learn forum: with current pesticide testing I find that a product is tested way too many times. processors want product tested, and then they test again. Right now this industry has adopted a very costly approach to testing, and this rulemaking seems to continue that trend. I really hope that we get pesticide testing that is not overly burdensome to farmers and protects consumers. Self selection testing at the lot level does not achieve this.
Shawn DeNae	Pesticide testing	Verbal comment received during Listen and Learn forum: It looks it looks like or if I read this right. It says that certified labs must be? I have a big Vale ability to do all this sort of testing and it lists it and includes pesticide, but then later on in this section. It says that labs can basically subcontract out to other labs for pesticide testing am I reading that correctly.
Jeremy Moberg	Pesticide testing	Verbal comment received during Listen and Learn forum: OK, yeah, it's delay. I'm so in the last one. It said that uh the the lab would fail a lot. If it if it was above a pesticide regardless if it was required pesticide pesticide. Uhm that sort of leaves, it up to the labs to determine what pesticides are required or not required if there is a fail for it and it discourages people from testing for other pesticides if they know that there is going to be a fail for those pesticides, so it just seems like. Uhm you know, either they're either. We should be testing for pesticides and we should list those and and that should be clear to everybody? What those are. I'm referring to D and the last page. Uhm said that the lot would be failed if there was a limit regardless of the pesticide. Uh is required or not, and there are a lot of of very benign pesticides that have very low action limits that are not required. To be tested for so a lab at this point could just test for whatever they want. Uh and it just seems inconsistent to have D there. Uh allowable levels, regardless of whether the limit test is required in the testing tables in this chapter. I think it should read you know allowable levels in it should be just end up and not say regardless of whether the limit test is required in the testing tables in this chapter. We should we, we should either have pesticides that we test for and have failure levels or not. It should be really clear to everybody and not just up to a lab oh, we brought on this, this and you know. And we we've seen this play out right now, we have 2 pesticides on that table that are allowed, but have action limits and that's a very troubling situation for farmers. Basically, you can follow the rules and and now be looking to lose 50 pounds and even though you followed a label on an organic pesticide and it was allowed but it has an action limit. This this comment has been brought to the LCB so many times and and we still have not gotten a response from the LCB why we have testing limits on allowable pesticides. We should either have allowable pesticides and disallowed pesticides and there should never be an action.

		For an allowed pesticide. And the and the 2 pesticides are pipe through New Butoxide and pyrethrins. And Piperonyl Butoxide If you follow the directions on the label. You're not supposed to be applying it to plants anyways. And so uh pie. Bruno Botox side. I can understand having an action limit on but pyrethrins and organic pesticide derived from chrysanthemums, having an action limit is is sort of stupid when you know, we've got another pesticide called as direct and that is sort of similar in. In some of its nature doesn't have a uh action limit and so those things are. Are just you know not consistent and I? I feel bad for the farmer that you know thinks he's doing the right thing, but plying organic pesticide and then now you know what the increased to 40 pounds is really going to suffer for that, so I wish that this issue would be addressed.
Jeremy Moberg	Pesticide testing	Verbal comment received during Listen and Learn forum: Yeah, I mean, I I just got reinsert the comment here that the test requirements for marijuana flower at the lot level. You know is it really should be the harvest level. But if we really are going to stick with the lot level. The only one that's shouldn't, it be here is pesticide screening pesticide screening should always be conducted at the farm level by a 3rd party. It's just too important to make sure that that testing is rigorous. And not cheat table uh and and that's good what the outcome is going to be here. This test that this regime in this way of approaching pesticides at the lot level is going to reward the cheaters and it is going to harm the people that follow the rules and it is specifically going to harm the people that produce the smallest lots and those are the craft farmers. They LCB just expanded tier ones to be from 2000 to 2 or 4000, acknowledging that they had market disadvantages. And this just really makes that whole push to make them viable business models even worse. I I I. I you know if we need to go to the Legislature and ask for money in order to fund the WSDA. We should they LCB has a history of working with the WSDA and I. I encourage you to look at that MOU between the WSD and the LCD, which has provided funding to the LCB. I encourage you to look at that and I encourage you to move. Pesticide testing to that current relationship and not put it on the farmers in a manner that can just be cheated.
Shawn DeNae	Pesticide testing	Verbal comment received during Listen and Learn forum: Inside. Section 4 it's talking about marijuana flower must be tested and and we've see pesticide screening has been added. Then you go further down intermediate products must be tested again for pesticides and so. Uh it further on it may it may require finished products. But it seems to me like if if the intermediate product needs to be tested for pesticide screening. Then the flower that it comes from doesn't need that and and and on the other side if. If the final product needs to be tested for pesticides, then I don't see why the intermediate product would need to be tested. I mean that just seems like. Triple testing costs to me and I also would like to see in section one. 2 I believe one no no no under intermediate products anyway, where it's too I. I that's what I'm saying I'm trying to say. I I marijuana mix must be chopped or ground. So no particles are greater than 3 millimeters.

		Uh Uh, I don't know why that is. I think we should strike that I mean. That's just another another step that we would have to take up to chop or grind. Our marijuana mix that is going for processing and so there's no reason why to grind it to less than 3 millimeters and I think we should just strike that entire thing. Thank you.
Jeremy Moberg	Pesticide testing	Verbal comment received during Listen and Learn forum: Uh uh, yeah, I just wanted to again mention that we got to make sure here to Sean 's comment that we're not duplicative testing and this industry sort of on its own that does a lot of self regulation a lot of self testing of pesticides. It is very duplicative. I cannot sell wholesale product without a pesticide test and then they immediately get a pesticide test you know, often upon. By saving it and then they'll get another pesticide test upon uh actually creating the product that they're after. Uh so there's really just brings me back to that the pesticides, it, it. It's a different beast than everything else here and needs to be treated much, much differently and and I really hope we end up with a system that is not current over costly and overburdensome for farmers like like the current system is so those that participate in in the self. Uh testing part of the marketplace, which is most of us, so there is a lot of testing. That's going on and it is. It is duplicative and and very expensive and cheetah paw quite honestly, you know, and I just really hope that this conversation starts to move towards pesticide testing. Uh that it that is not self selection that is not conducted and that is conducted at the farm level. We really need to protect consumers here, which is not going to be achieved. Without that very important aspect to it, and we need to not create a system that is overly burdensome to farmers who are having a terrible time. Even surviving in this massively overproduced marketplace at the LCP has created for us.
Shawn DeNae	Pesticide failure	Verbal comment received during Listen and Learn forum: And 6 a excuse me in 6, A and 6 B. They both end in uh may be sold unless failed for tests that require immediate destruction. It seems like immediate destruction. You know tests that require immediate destruction. did I just miss that is that talked about in the previous pages of this rule draft or does that come. Does that come in the future of this role draft? Is it it? It uh specifically relates to relates to tests that require immediate destruction. But I don't find those tests that do require immediate destruction.
Travis Royce	Pesticide testing	Comment received by email: Hello! My only real comments on this are pesticide tests should not be strain specific – we harvest 30-50lbs every week with 2-3 strains per harvest. Each harvest is in the same zone, so when we implement our IPM, we do the entire zone/harvest at the same time, regardless of strain. By including per strain testing, you will be costing us 2-3 times more every week for no purpose and no benefit to the end consumer.
Nick Mosely	Pesticide testing	Comment received by email:

		Pesticide screening at **harvest level**. Comment was provided by several attendees that rather than deduct large samples from "arbitrary" lot sizes, the pesticide test should be conducted at the "harvest level." ○ Pursuant to this recommendation, WAC 314-55-101 subsections 3a and 3c and WAC 314-55-102 subsection 3h have been edited to provide f or flexibility reflective of the desire to optionally screen marijuana flower at the harvest level.
Nick Mosely	Pesticide testing	Comment received by email: Maintaining consistency with the residual solvent screening section i n WAC 314-55-102 subsection 3f, the pesticide screening section WAC 314-55-102 subsection 3g has been edited to clarify that the list in WAC 314-55-108 is t he list of pesticides that certified labs must test to, when required, at a minimum.
Danielle Rosellison	Pesticide testing	WAC 314-55-102.6(c) Pesticide failures may not be remediated. Why? This should be allowed with board approval as the science continues to evolve. At least give the option... Pesticide failures may not be remediated unless approved by the Board.
Jeremy Moberg	Remediation	Chat comment received during Listen and Learn forum: does that include pesticides? [3:28 PM] Jeremy Moberg can products that fail pesticide testing be remediated?
Jeremy Moberg	Remediation	Chat comment received during Listen and Learn forum: I feel that (a) should be more clear and the industry should not have to go to the board for approval. Rule should clearly show when product is remediable.
Danielle Rosellison	Remediation	Comment received by email: WAC 314-55-102.6 All stuff regarding remediation Looks great!! N/A
Danielle Rosellison	Remediation	Comment received by email: WAC 314-55-102.6(c)(iv) (iv) If a failed quantity of marijuana is not remediated or reprocessed in any way, it cannot be retested. Any subsequent certificates of analysis produced without remediation or reprocessing of the failed quantity of marijuana will not supersede the original compliance testing certificate of analysis. Again why? Let's be proactive and give the Board the ability in case a scenario comes up. (iv) If a failed quantity of marijuana is not remediated or reprocessed in any way, it cannot be retested unless aproved by the Board. Any subsequent certificates of analysis produced without remediation or reprocessing of the failed quantity of marijuana will not supersede the original compliance testing certificate of analysis unless approved by the Board.
Nick Mosely	Remediation	Comment received by email: Finally, this document recommends allowing remediation of lots and batches that fail

		pesticide screening. Without such an allowance, the rule proposal is likely to meet significant opposition from licensees that are in the business of remediating product that has (or would have) failed pesticide screening. While it is understood that the board desires products to be free of pesticide residues at the time of harvest, the reality is that they often are not. Remediation of failed products i s doable using conventional techniques that don't require the addition of potentially harmful substances, and this i s generally a good thing. Furthermore, remediation is often taking place at processor licensed locations which are removed from the cultivation process that resulted in the contamination. It is recommended that the WSLCB pursue punitive action against non-compliant licensees through means other than restricting the utilization of safe and effective remediation strategies. For consideration: remediation of failed harvests, lots, or batches i s specifically allowed under WAC 314-55-108, which is not under consideration in this rulemaking.
Holly Lorentson		Page 25 Section 4 Required quality control tests Cannabis is an agricultural product, and the pesticide testing should be treated as such, tested at the farm or harvest level. Testing pesticides at individual lot levels will slow down the turnaround of lab testing as there are only 5 certified labs for pesticides at this time.
Danielle Rosellison	Mycotoxin testing	Chat comment received during Listen and Learn forum: strike through the mycotoxin requirement
Shawn DeNae	Mycotoxin testing	Chat comment received during Listen and Learn forum: Jeremy's comments on mycotoxin screening needs added here.
Jeremy Moberg	Mycotoxin and microbial testing testing	Verbal comment received during Listen and Learn forum: OK, Hi I'm so I have 2 questions one about the mycotoxins. It's Aspergillus Aspirin. Tell Jess I added to the mycotoxin list that is one. Christian. My other question is regarding microbiological or entero testing. Uh entero and Additionally the entero in food Sciences and a lot of other testing Sciences. You only submit an entero test and if you fail. The Intro Test then you supply a larger sample to be able. That, it's not that the dangerous Centro such as salmonella and E coli and in testing regime that has both entro as well as E coli and salmonella is redundant and overly expensive. Uh so I had hoped to see that this microbiological testing was going to have an intro testing and if you scored above a certain level on intro, then you've resubmitted for seminoma Ella or equal block. Can you speak to that at all? OK and then the other question and I I guess the answer is maybe the same for weather passages is being tested for or not. I would suggest that the micro toxin. List Be revisited. It has been a couple years since we've been sampling for these things and the Sciences has developed. I know we don't test for Abbasid that Sylogist

		and that is really the the only one out of the mycotoxin list that I know of that is actually had negative impacts on humans. And so it's sort of an omission that needs to be filled and then I believe in it, but I'm not clear that some of those mycotoxins that we do test for or have either never been found in their entirety or have been not to be found at the toxic in cannabis. So I'd like a review of the mycotoxins that we have that we have listed in that we, we test for. I also believe that the mycotoxins and the and these data are the This is a good example of testing that showed occur. At the harvest level, there was a lot of feedback during the last CR 102 that that every day. There's a lot of different tests in this in this whole field of testing and it's more appropriate to have different levels of testing for each test and so I was, I was hoping that this draft rule would suggest you know harvest testing for by strain for cannabinoid 's and mycotoxins and Microbials and then farm level testing conducted by 3rd party. For pesticides. Uh and I guess I'd like to hear because that was a lot of of of feedback that came in did the LCB decide to reject that feedback or decide that that they did not think that that was those that feedback was feedback was valid. Thank you. Yeah, I think a lot of us in the industry are really surprised to see another and expansion of this arbitrary lot level up to 50 pounds. Uh it's it's really lacks scientific basis behind it, and I think that we had hoped. We were going to get away from this arbitrary lot size. Uh and now we're talking about just a massive expansion of it, which you know when you increase that size. You do a lot of harm to very to farms that produce very small lots. So essentially the craft farmers who make very specialized products that now you know, and of course, the big farms will do well under this scenario. So I I guess I. I'm a little surprised to see the proposal as it stands given the history.
Jeremy Moberg	Microbial testing	Chat comment received during Listen and Learn forum: thius should be bile tolerant only, with follow up tests for the others if fail for bile
Sherman Hom	Microbial testing	Comment received by email: Our primary point is that total microbial count tests (“indicator tests”), such as BTGN bacteria do not test directly for the presence of species specific human pathogens. The American Herbal Pharmacopoeia’s Cannabis Inflorescence Cannabis spp. monograph [1] states that total microbial count tests with their corresponding action levels must never be used to pass or fail a cannabis sample. The total count result does not provide any information on the presence of any pathogenic microorganisms in the cannabis sample, which may cause harm to patients and consumers.
Jeremy Moberg	Heavy metals	Chat comment received during Listen and Learn forum: It my understanding that it is very rare to find heavy metals in flower. Developing a very expensive regime for heavy metals without first establishing the extent of heavy metals showing up in flower seems like solving a problem that may not exist.
Jeremy Moberg	Solvent testing	Chat comment received during Listen and Learn forum:

		why is butane allowed up to 5000 ppm?
Gregory Foster	Solvent testing	Chat comment received during Listen and Learn forum: I'm wondering if the list of solvents has incorporated contemporary processes used to synthesize D8 and D9 from CBD?
Shawn DeNae	Solvent testing	Verbal comment received during Listen and Learn forum: Just a comment on why the butane residual solvents are so high in the industry processors that are processing. Uhm uh concentrates this way are really striving for a much lower residual solvent. I've heard you know as down to 50 parts per 1,000,000 rather than 5000 so I mean, it, it's doable. You can make a cleaner product with much less than 5000 parts per 1,000,000 of solvent so yeah, I agree. I I think we should really tighten that up, especially since since patients that have immune you know compromised immune systems really rely on concentrates. We need to make sure those things are very clean and very safe for that marginalized patient community. Uh yeah, I think energy heavy metal screening heavy metal screening is required for all DH compliant products. Uh as described in the chapter heavy metal screening is optional for Non D 8. DoH compliant products. However, heavy metal limits provided below apply to all products any product exceeding the provided limits is subject to recall the board may conduct random or investigation driven heavy metal screening. For compliance I would say the the board shall conduct rather than May. I I really think the board is obligated to conduct random investigation on a heavy metal screening. I'm I'm mostly for the reasons that I I mentioned before because of the patient community, but also you know, we know from the vape carts care that there are there are heavy metals that can Leach from poor? Portmap cart containers and so again we, we must conduct random screening at the store level. So I would suggest changing May 2, must or shall.
Danielle Rosellison	Solvent testing	Comment received by email: One more suggestion....I've spoken with several patients who would like residual solvents DECREASED for DOH compliant product. In an effort to not pigeon hole yourself, perhaps: (g) Heavy metal screening. Heavy metal screening is required for all DOH compliant product as described in chapter 246-70 WAC. Heavy metal screening is optional for non-DOH compliant product; however heavy metal limits provided below apply to all products unless otherwise described in chapter 246-70. Any product exceeding the provided limits is subject to recall and destruction. The board may conduct random or investigation driven heavy metal screening for compliance. That way if the patients petition the DOH to change their rules for residual solvents, you won't have to change yours to be copesetic.

Attachment A
Public Comment Table
Topic: Conceptual Draft Rules for Cannabis Quality Control Testing

Jeremy Moberg	Solvent testing	Verbal comment received during Listen and Learn forum: OK, just to give you some context on the 5000 parts per 1,000,000 for both butane and propane originally it was 500 and it. Yeah, it was without I was quite surprised to see when it jumped to 5000. I was in the advisory committees that worked on those original. Oh, sorry about that, yeah, I was in those committee advisory committees. Uhm in 2005 are sorry 2015 with Joanne 80 and there was never discussion about. Raising those levels to 5000 and I think the industry was quite surprised to see them go into go to 5000. But they've been there for the last 2 or 3 years and they they really should go back to 500.
Jim MacRae	Foreign matter	Chat comment received during Listen and Learn forum: Foreign matter screening - does the addition of iii comport with standard thresholds of any sort? I am concerned about a single "insect fragment", for example, being sufficient to reject a sample. Seems like a low bar and also seems to be pro-pesticide and anti-beneficial predatory insect. I am glad rat turds are proposed to be disallowed. Long time coming.
Jamie Shipman	testing	Chat comment received during Listen and Learn forum: Is there a route for retail stores to be able to do secondary testing on products currently on our shelves? My understanding would be that that is still within the lines of traceability & how would we go about manifesting samples to the labs?
Travis	Testing	Chat comment received during Listen and Learn forum: You can do non-mandatory samples to any lab. No need for a manifest
Evans, Meagan (AGR)	Testing resources	Chat comment received during Listen and Learn forum: Great resource for lab testing services provided by WSU Pest Management Resource Service: Analytical Laboratories and Consultants Serving Agriculture in the Pacific Northwest (wsu.edu). You can filter search results of analytical laboratories by specific services (heavy metals, pesticides, etc.), accreditation, and location (WA and/or OR). Analytical Laboratories and Consultants Serving Agriculture in the Pacific Northwest
Jeremy Moberg	Synthetic testing	Chat comment received during Listen and Learn forum: Being that synthetics THC's are not allowed, would the presence of such synthetics represent a fail in concentrates.
Shawn DeNae	WSDA testing	Verbal comment received during Listen and Learn forum:

		To to follow up on that, UM our farm had a visit by our enforcement officers last fall and they took random samples and send him into the Department of AG for testing. Members of the sun and Craft Growers Association or reporting back to us that a lot of them are. Uhm uhm having visits by LCB to collect. Uh samples to send into the WSDL lab for pesticide testing and so we know that that's happening. Uhm. How do how do we get an update on some of those results 'cause it seems like that work is imperative to informing this work. This rulemaking and dumb and to my knowledge industry hasn't had any reports back on the WSDA testing on pesticides and you know again. That's that's important information to know before we go down a path of. Yeah, rulemaking on pesticides, I believe. So who can give us information on that or how can we get information? How can industry be informed as to? Uhm. What's happening with the WSDA testing currently? OK, thank you. I I'm glad that you agree that it's imperative information to get while we're working on these rules.
Jeremy Moberg	Synthetics	<u>Verbal comment received during Listen and Learn forum:</u> Yeah, I'm curious now that we have the synthetics in the marketplace. We it's clearly not allowed by rule. Uhm will there be methods to detect synthetically derived Delta 8, Delta 9. Delta, 6, Delta 7. All the deltas that are potentially out there and will those become a fail on testing and will that become part of testing in order to find out what that synthetic if if cannabinoid 's inner product are synthetically derived. I feel like that, being illegal. There there that this should fall under quality assurance. Because right now, it's pretty easy to bring in isolate and we've and we've got CBD isolate coming into the marketplace and we really have no way to police that marketplace. You know, we've got a rule that says. You can't make synthetics, but of course, people are doing it and without some sort of quality assurance portion in order to detect synthetics. It's going to continue to happen. And I'd like to see some sort of synthetic testing added 2 quality assurance.
Shawn DeNae	End products	<u>Verbal comment received during Listen and Learn forum:</u> Says intermediate products. Intermediate products that passed the required quality control testing may be sold or added to an end product with no further testing of the intermedium product required and then it says a single serving may not exceed 10 milligrams at active THC. That last line a single serving doesn't seem appropriate to be in the intermediate product, 'cause Intermediate product is. Is added to an end product right? So that language seems to be out of out of place. Talking about a single serving. Well, sure, but that seems like it would be better.

		Uh placed in end product rules rather than an intermediate product rules.
Shawn DeNae	Investigation driven testing	Verbal comment received during Listen and Learn forum: Sure, UM 9, UM the board or its designee may request that a licensee or a certified lab provide an employee of the board or their desi designees samples of marijuana or marijuana products or samples of growing medium soil. Amendments fertilizers crop production. Aids pesticides or water for random or investing compliance checks samples, maybe randomly screened and used. For other quality control tests deemed necessary to the board. I I would. This is maybe where we where we get in that random testing. UM may request that a licensee or a certified lab. Uh so retailers are licensees right. This seems to read like it would be more targeted to the producer or the processor side. But if we can bolster this language. Uh. To uh specifically include include end products from the retail that might be that might be where we can address this. Uhm. I don't know I'm sorry. I don't have specific language. I'm I'm just now reading this for the first time so thank you. It if my mic still on yeah, you know, there's there's a handful of us that have been very involved in this for 6 years, so I think I think this whole thing started back in 2015 and so there's been a lot of information that was submitted but we've had you know a few changes in leadership at the LCD and I don't know if those archive documents. It doesn't appear like you guys are aware of some of the. At a former documents so just like to have an open path of knowing if we can resubmit those documents for consideration in this rulemaking process.
Shawn DeNae	Referencing samples	Verbal comment received during Listen and Learn forum: So this is all talking about chain of custody between the labs and and being able to sub subcontract with other labs. And so I appreciate that the rules or wanting to keep it a tight chain of custody, but I reflect back on the fact that if these rules continue to be reliant on self selected samples. Then that right there just kind of breaks the chain of custody kind of follow through and you know, so any self selected sampling we must have end product random off the shelf testing to to keep people honest because. Yeah, UM cheaters will cheat and so. And that's really the only way to make sure that the products for consumers are clean is to do final testing and final packaging of final products for consumers. So you know all of this chain of custody with the labs. Doesn't really mean anything if if we don't have an product testing? So. OK, well, thank you.

Attachment A
Public Comment Table
Topic: Conceptual Draft Rules for Cannabis Quality Control Testing

Danielle Rosellison	Harvest testing	Comment received by email: WAC 314-55-010 (14) (14) "Harvest" means the marijuana plant material derived from plants of the same strain that were cultivated at the same licensed location and gathered at the same time. See above (14) "Harvest" means the marijuana plant material derived from plants of the same strain that were cultivated at the same licensed location and gathered at the same time no more than one day.
Holly Lorentson		Comment received by email: Requires labs be certified for pesticides and mycotoxins, but later states (P11 Section C) that labs can subcontract out for these tests. Please clarify and edit one of the two sections. It would make more sense to state "that a lab can only report data for tests that they are certified by the WSLCB.". A lab shouldn't need to be certified for every test, but only allowed to report data for the tests they are certified for. Example 1. A lab only wants to test edible samples. That lab should only have to be certified for cannabinoid profile. Example 2. A lab only would like to analyze flower samples. That lab does not need to be certified for residual solvent testing.
Holly Lorentson		Comment received by email: "Certified labs must fail a sample if the results for any limit test are above allowable levels regardless of whether the limit test is required in the testing tables in this chapter. " Please clarify. Does this apply to non-mandatory samples or just mandatory samples?
Holly Lorentson		Comment received by email: Page 20 Section 3a Cannabinoid Concentration If these are the only cannabinoids labs must report (THC-THCA-I502THC-CBD-CBDA-I502CBD), then these should be the only cannabinoids that producers/processors should be allowed to put on package labels and that labs should be allowed to put on the COA. If Delta 8 is something that producers/processors are not supposed to have in their products, then this needs to be a required cannabinoid to test for with a failing limit. For example, any product above 0.5% D8-THC is a failure. Any edible with 0.5mg/service D8-THC is a failure.
Holly Lorentson		Comment received by email: Page 28 4c Intermediate Products- Required quality control tests ▪ (ii) Marijuana mix must be chopped or ground, so no particles are greater than 3 mm Why is this a requirement? Are labs expected to reject samples that do not meet this requirement? Are labs expected to sieve the lot to verify compliance.? Is there any leeway (10% of the lot by weight can be above 3mm)?
Holly Lorentson		Comment received by email:

		General Question How many significant figure are labs supposed to report to? And what is the rounding rule for the significant figure? Example: 10.02mg/serving Would this round down to 10mg/serving?
Shawn DeNae		Verbal comment received during Listen and Learn forum: Thanks Umso Section 5 B. I'm trying to wrap my head around this licensees may host sale or transfer failed batches or quantities of marijuana flower to be extracted pursuant to subsection 6 of this section unless failed for tests that require immediate destruction. Uhm. You know it. It just doesn't seem to make sense if you have to test for flower. But if you fail. The test you can still sell it to be extracted. I I don't know I guess I that just doesn't seem to settle well with me, but I haven't completely looked at Section 6, which it's referring to yet so. I'm ah. Do we really want failed batches to continue in the system. I don't know.
Matt Heist	End product testing	Comment received by email: Hello, For the proposed rule change to WAC 314-55-102 Sec. 4, (c), (v), concerning intermediate products: Intermediate products that pass the required quality control testing may be sold or added to an end product, with no further testing of the intermediate product required. A single serving may not exceed ten milligrams active tetrahydrocannabinol (THC) consistent with WAC 314-55-095(1)(a). End products absolutely need to have a potency test before sale. Without end product testing, the consumer leaves it up to the processor to mix the correct ratio of THC to other ingredients. This could be achieved by an experienced processor, but End product testing is vital for consumer safety and acts as a final check to determine if the processor manufactured the batch appropriately and the serving size is correct to produce a 10 mg serving of THC.
Holly Lorentson		Comment received by email: Page 29 4c (v) Intermediate Products- Required quality control tests (v)A single serving may not exceed ten milligrams active tetrahydrocannabinol (THC) consistent with WAC 314-55-095(1)(a). This should specify that this requirement is for edible products only. Please provide more explanation. Currently we enter edibles in mg/g. If we are supposed to fail edibles that are over 10 mg/serving, what is the serving size of the candy? Is it the weight of the candy tested, or the weight stated on the package? Is there any variance allowed for production size? The lab weighs out the package of candy and the packaging states 5g candies and the weights of the actual candies vary from 4-6 grams due to variances in production. The lab tests a 5.8g candy and the result is above 10mg/serving.
Marilyn Olson		Comment received by email: Hello,

		This is regarding the Conceptual Draft Rules Designed For Discussion regarding Cannabis Quality Control Testing; Specifically the below sentence Intermediate products that pass the required quality control testing may be sold or added to the end product, with no further testing of the intermediate product required. A single serving may not exceed ten milligrams active, (THC) consistent with WAC 314-55-095 (1) (a). During the online meeting we were told that end products may not be required to test. The above statement doesn't say this, therefore the confusion. I'm writing to get the correct information regarding proposed edible testing and other end product testing. Sincerely, Marilyn
Amber Wise		Dear WSLCB staff and rules coordinators; Having reviewed the conceptual draft rules designed for discussion regarding cannabis quality control testing dated October 1, 2021, I am offering the following comments and suggestions based on my years of scientific expertise in the Washington state cannabis industry. Lot size / number of samples (proposed WAC 314-55-101) While I recognize the number of accredited labs is quite small in relation to the number of licensees, some of the changes proposed will drastically affect the business models and cash flow of the labs, particularly the smaller testing labs. This is due to the huge reduction in number of the tests our customers will need due to the increased lot size. In other words, for flower, labs are now performing one test per 5-pound lot; this will change under these proposed rules to, at the extreme, one test per 50-pound lot. It does not appear that the testing labs were considered in the Small Business Impact Estimate conducted by the WSLCB during the drafting of these rules. Aside from the business impact to the labs, increasing the flower lot size to 50 pounds goes against the scientific and economic data, including data that has been presented in comments to the WSLCB many times over the past years. To reiterate prior comments, allowing growers to self-sample is not a random or representative way to get an accurate sample and rewards licensees who break the rules. This problem is only magnified by the increased lot sizes. Further, this current version tries to account for the larger lot size by requiring the licensee to submit more total grams of sample. However, the lab will still only use a VERY SMALL amount for one test, resulting in a value that is not representative of the entire lot. For example, for a 50-pound lot, 19 one-gram samples will be collected, but only less than a gram will be used for testing. This will result in extra samples piling up that the lab will need to store and then dispose of. And finally, the 10x larger lot size will reduce our lab's testing volume by around 80%, leading to a HUGE loss in revenue. It's not clear that the additional pesticide testing revenue will make up for this. Further, the much larger lot size benefits larger growers and penalizes smaller growers that often produce medical-grade and specialty products. Again, this would seem to have a negative impact on the smallest of businesses.

		I would suggest that lot sizes be reduced back down to 5-pound lots. I would further recommend a third party sample collection process. While I appreciate from your responses to common themes that you are concerned about the logistics and increased costs of third party sampling, this could be accomplished as a pilot program, through spot audits, or through maximizing the contract you already have with WSDA. There are a number of ways to implement this, and I'm happy to give some ideas and suggestions if this is a requirement the LCB is interested in pursuing. Quality assurance testing/types of tests (proposed WAC 314-55-102) First, I am concerned about heavy metals testing being optional. More specifically, the draft rules stated that certified labs may—but not must—be certified for heavy metal testing. If they are, they must then comply with guidelines for the field of testing for heavy metals. This seems to suggest that if one lab offers such services but a second does not, a licensee would be incentivized to use the one that does not because in that case, their product would not be tested—and possibly failed—for heavy metals. If you want Washington product to be tested for heavy metals—which we all should—it should be mandatory across producers and across labs. Second, the language in section (2)(d) is vague and should be clarified to clearly state which pesticides are allowed, which are not, and which pesticides labs are responsible for testing for and to what levels. The current language ("regardless of whether the limit test is required in the testing tables in this chapter") essentially creates an unlimited list of compounds that certified labs "must fail." I would suggest that the language be revised to "Certified labs must fail a sample if the values for the pesticides listed in WAC 314-55-108 are larger than the action limits listed therein." Further related to pesticides, I also have a clarification question: current section (3)(h) refers to "applicable department of agriculture rules." What does this refer to and how does that affect a lab's required list of pesticides and LOD/LOQs? Currently, the WSDA's lab has a very large list of pesticides with very low LODs and there is no commercial lab where growers can confirm results from the WSDA nor pre-screen products to the same testing they might be subjected to. And finally, again related to pesticides, I do not understand why product that fails pesticide testing cannot be remediated. A producer with a 50-pound lot will be at such significant risk if the entire lot fails that it could be incentivized not to properly sample because a positive test would doom the entire lot. At least if they know their crop could be remediated, you would have better assurances of accurate sampling practices. Deletion of end product testing (deletion of WAC 314-55-102(2)(d)) Removing the requirement for end product testing for edibles, beverages, topicals and tinctures is not useful for consumers, public health or understanding what types of products are being sold. To my knowledge, removing this testing requirement has never been suggested by an expert or licensee. Given that there is still a requirement that a single serving of edible end product not exceed 10mg, how will this requirement be enforced or traced? The removal of this requirement will result in a loss of revenue for labs testing these products and a loss of information of what is in a product someone is purchasing, including potency. My suggestion is to keep end product testing requirements AND as I've commented in the past require microbial and mycotoxin testing of edibles or tinctures due to the likelihood of additional ingredients to introduce these contaminants. I appreciate the opportunity to submit comments and be a part of the regulatory process and remain available to assist in revisions to these rules. I would also appreciate if LCB could address the many (unanswered) questions raised during the Listen & Learn session hosted on October 20th by an FAQ or some other form of public follow up. Thank you for your consideration.

		Amber Wise, PhD Scientific Director Medicine Creek Analytics 253-320-8530
Matt Heist		Hello, For the proposed rule change to WAC 314-55-102 Sec. 4, (c), (v), concerning intermediate products: Intermediate products that pass the required quality control testing may be sold or added to an end product, with no further testing of the intermediate product required. A single serving may not exceed ten milligrams active tetrahydrocannabinol (THC) consistent with WAC 314-55-095(1)(a). End products absolutely need to have a potency test before sale. Without end product testing, the consumer leaves it up to the processor to mix the correct ratio of THC to other ingredients. This could be achieved by an experienced processor, but End product testing is vital for consumer safety and acts as a final check to determine if the processor manufactured the batch appropriately and the serving size is correct to produce a 10 mg serving of THC. Thanks, Matt Heist -- Green Grower Labs 124 E. Rowan Ave (509) 981-2266
		Hello, Thank you for hosting the session on Cannabis Testing and discussing the draft conceptual rules. We have the following comments with regards to that discussion. WAC 314-55101 Sec. 1 part C: Please include a requirement for a unique Sample ID for every sample • Comments: A unique sample ID is absolutely necessary to identify all samples submitted to a lab. WAC 314-55101 Sec. 3 part B: (Changing the lot size) • Comments: This was an unexpected, dramatic and seemingly arbitrary proposal in testing requirements. Labs currently test 6 grams out of every 2,240 grams sold (5lb lot). According to these conceptual rules, labs will still test 6 grams regardless if the lot is 2,240 grams (5 pounds) or nearly 22,400 grams (50 pound lot). Clearly, meaningfulness of the results from that single battery of tests significantly decreases as the lot size grows. While we can appreciate a desire to decrease a financial burden on producers and processors, reducing the current testing frequency does not appear to coincide with LCB mandate of public safety. Current testing costs are minimal when compared to overall costs involved, e.g., 8 cents per gram at our facility per 5 pounds.

		In addition, we are unaware of any grower or processor having indicated that current testing requirements are burdensome, either during the meeting or elsewhere. To the contrary, several comments by growers during the meeting indicated concern regarding decreasing validity with increasing lot sizes and corresponding risks involved with potential failures of larger lot sizes. Accordingly, we agree with the commenters that support the current rules involving 5 pound lots. The pending economic impact analysis may indicate the costs involved in pesticide testing are onerous. If so, requirements should be addressed as a separate matter with larger lot sizes allowed for pesticide testing specifically, leaving other testing requirements at 5lbs. Thank you for your time, Matt Heist Robert Haddad
Matt Heist Robert Haddad		Hello, We would like to offer another comment on this section of the draft rules: WAC 314-55-101: (4) Sample retrieval and transportation. Certified labs may retrieve samples from a marijuana licensee's licensed premises and transport the samples directly to the lab. We agree with the language of this section which leaves it optional for labs to retrieve samples and not make it mandatory which would significantly increase the cost of QA testing to the producer/processor. Thanks, Matt Heist -- Green Grower Labs 124 E. Rowan Ave (509) 981-2266 ---
Marilyn Olson		Hello, This is regarding the Conceptual Draft Rules Designed For Discussion regarding Cannabis Quality Control Testing; Specifically the below sentence Intermediate products that pass the required quality control testing may be sold or added to the end product, with no further testing of the intermediate product required. A single serving may not exceed ten milligrams active, (THC) consistent with WAC 314-55-095 (1) (a). During the online meeting we were told that end products may not be required to test. The above statement doesn't say this, therefore the confusion. I'm writing to get the correct information regarding proposed edible testing and other end product testing. Sincerely, Marilyn Marilyn Olson Owner/Scientific Director

		Integrity Labs LLC www.IntegrityLabsOlympia.
Danielle Rosellison		My big question is does a sample = a test? Or when they talk about 8 samples, are we homogenizing them into one test?
Danielle Rosellison		One more suggestion....I've spoken with several patients who woul dlike residual solvents DECREASED for DOH compliant product. In an effort to not pigeon hole yourself, perhaps: (g) Heavy metal screening. Heavy metal screening is required for all DOH compliant product as described in chapter 246-70 WAC. Heavy metal screening is optional for non-DOH compliant product; however heavy metal limits provided below apply to all products unless otherwise described in chapter 246-70. Any product exceeding the provided limits is subject to recall and destruction. The board may conduct random or investigation driven heavy metal screening for compliance. That way if the patients petition the DOH to change their rules for residual solvents, you won't have to change yours to be copesetic.
Matt Heist Robert Haddad		Hello, Thank you for hosting the session on Cannabis Testing and discussing the draft conceptual rules. We have the following comments with regards to that discussion. WAC 314-55101 Sec. 1 part C: Please include a requirement for a unique Sample ID for every sample • Comments: A unique sample ID is absolutely necessary to identify all samples submitted to a lab. WAC 314-55101 Sec. 3 part B: (Changing the lot size) • Comments: This was an unexpected, dramatic and seemingly arbitrary proposal in testing requirements. Labs currently test 6 grams out of every 2,240 grams sold (5lb lot). According to these conceptual rules, labs will still test 6 grams regardless if the lot is 2,240 grams (5 pounds) or nearly 22,400 grams (50 pound lot). Clearly, meaningfulness of the results from that single battery of tests significantly decreases as the lot size grows. While we can appreciate a desire to decrease a financial burden on producers and processors, reducing the current testing frequency does not appear to coincide with LCB mandate of public safety. Current testing costs are minimal when compared to overall costs involved, e.g., 8 cents per gram at our facility per 5 pounds. In addition, we are unaware of any grower or processor having indicated that current testing requirements are burdensome, either during the meeting or elsewhere. To the contrary, several comments by growers during the meeting indicated concern regarding decreasing validity with increasing lot sizes and corresponding risks involved with potential failures of larger lot sizes. Accordingly, we agree with the commenters that support the current rules involving 5 pound lots. The pending economic impact analysis may indicate the costs involved in pesticide testing are onerous. If so, requirements should be addressed as a separate matter with larger lot sizes allowed for pesticide testing specifically, leaving other testing requirements at 5lbs.

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Public Comment Table
Topic: Conceptual Draft Rules for Cannabis Quality Control Testing

Matt Heist		Hello, We would like to offer another comment on this section of the draft rules: WAC 314-55-101: (4) Sample retrieval and transportation. Certified labs may retrieve samples from a marijuana licensee's licensed premises and transport the samples directly to the lab. We agree with the language of this section which leaves it optional for labs to retrieve samples and not make it mandatory which would significantly increase the cost of QA testing to the producer/processor. Thanks, Matt Heist -- Green Grower Labs 124 E. Rowan Ave (509) 981-2266 ---
Matt Heist		Hello! My only real comments on this are pesticide tests should not be strain specific – we harvest 30-50lbs every week with 2-3 strains per harvest. Each harvest is in the same zone, so when we implement our IPM, we do the entire zone/harvest at the same time, regardless of strain. By including per strain testing, you will be costing us 2-3 times more every week for no purpose and no benefit to the end consumer. Visit Our Grow Flow Store Here
Matt Heist		Hello, We would like to offer another comment on this section of the draft rules: WAC 314-55-101: (4) Sample retrieval and transportation. Certified labs may retrieve samples from a marijuana licensee's licensed premises and transport the samples directly to the lab. We agree with the language of this section which leaves it optional for labs to retrieve samples and not make it mandatory which would significantly increase the cost of QA testing to the producer/processor.
Danielle Rosellison	WAC 314-55-101.2(a)	"All samples must be deducted, stored, and transported in a way that prevents contamination and degradation." This is great and much better than it was origianlly.
Danielle Rosellison	WAC 314-55-101.3(a)	"Samples must be of roughly equal weight not less than one gram each. Each sample must be deducted from a harvest as defined in WAC 314-55-010(14)." Why? Why do they need to NOT be less than 1 gram? That seems arbitrary. If you're sending in a lot of B buds, 1 gram bugs may not be a representative sample. Furthermore, I think it is important to include a timeline with the definition of harvest in WAC 314-55-010(14). Otherwise it's easy to say that a harvest could be 1 day or a month or a perpetual harvest means you only need one test. Suggestion: "Samples must be of roughly equal weight ~~not less than one gram each~~. Each sample must be deducted from a harvest as defined in WAC 314-55-010(14)."

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Public Comment Table
Topic: Conceptual Draft Rules for Cannabis Quality Control Testing

Danielle Rosellison	WAC 314-55-010 (14)	"(14) "Harvest" means the marijuana plant material derived from plants of the same strain that were cultivated at the same licensed location and gathered at the same time." Suggestion: "(14) "Harvest" means the marijuana plant material derived from plants of the same strain that were cultivated at the same licensed location and gathered at the same time no more than one day."
Danielle Rosellison	WAC 314-55-101.3(b)	"For marijuana flower weighing up to 10 pounds, a minimum of 8 samples must be taken." This is taking a sample for every 1.25 pounds. QUESTION: Is this 8 samples, homogenized into one test? Or is this 8 samples and 8 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former.
Danielle Rosellison	WAC 314-55-101.3(c)	"For marijuana flower weighing 10 pounds or more but less than 20 pounds, a minimum of 12 samples must be taken." This is taking a sample for every 1.6 pounds. QUESTION: Is this 12 samples, homogenized into one test? Or is this 12 samples and 12 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former.
Danielle Rosellison	WAC 314-55-101.3(d)	"For marijuana flower weighing 20 pounds or more but less than 30 pounds, a minimum of 15 samples must be taken." This is taking a sample for every 2 pounds. QUESTION: Is this 15 samples, homogenized into one test? Or is this 15 samples and 15 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former.
Danielle Rosellison	WAC 314-55-101.3(e)	"For marijuana flower weighing 30 pounds or more but less than 40 pounds, a minimum of 18 samples must be taken." This is taking a sample for every 2.2 pounds. QUESTION: Is this 18 samples, homogenized into one test? Or is this 18 samples and 18 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former.
Danielle Rosellison	WAC 314-55-101.3(f)	"For marijuana flower weighing 40 pounds or more but not more than 50 pounds, a minimum of 19 samples must be taken."
Danielle Rosellison		This is taking a sample for every 2.6 pounds. QUESTION: Is this 19 samples, homogenized into one test? Or is this 19 samples and 19 tests? I am hoping it's the former. If it is not the former, I have huge concerns and would like revised rules to BE the former. What happens after 50 pounds? I would recommend continuing this upward. For example, we harvest a room which is 50-75 pounds in a day. Does that mean we woul dneed two seperate tests for one room? That's going to cause problems for labelling, selling, ect. This can be address if we continue this pattern. If we define harvest, and decide what's the most that can be harvested in a "harvest" (I used "one day above), then we should get up to at least that amount in the sampling procedure. Suggestion: "For each additional ten pounds of marijuana flower, an additional sample must be taken."
Danielle Rosellison	WAC 314-55-102. 1(a) (ii)	"Potency analysis;" Potency analysis isn't an accurate term. THC and CBD do not by themselves indicate potency to the consumer or patient. Cannabinoid concentration is a better, more accurate term. After all of this Delta 8 hoopla (that's a

		technical term), I think we have learned the importance of using the correct terminology. This is an opportunity to adjust our vernacular before it's a problem. Suggestion: "~~Potency analysis~~ Cannabinoid concentration analysis;"
Danielle Rosellison	WAC 314-55-102.3(a)	"Cannabinoid concentration analysis." Look!! You already did it!! Just need to use the same verbiage in 314.55.102.1.a.ii
Danielle Rosellison	WAC 314-55-102.3(a)(iii)	"(iii) Regardless of analytical equipment or methodology, certified labs must accurately measure and report the acidic (THCA and CBDA) and neutral (THC and CBD) forms of the cannabinoids." Should we put a numeric value in here? Like to at least the tenth or hundredth place? That way we aren't penalizing companies that have more sensative equipment than other companies? Suggestion: "(iii) Regardless of analytical equipment or methodology, certified labs must accurately measure and report the acidic (THCA and CBDA) and neutral (THC and CBD) forms of the cannabinoids to at least the tenth decimal place."
Danielle Rosellison	WAC 314-55-102.4(a)	"1. Moisture analysis 2. Potency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening 6. Pesticide screening" Suggestion: "1. Moisture content 2. ~~Potency analysis~~ Cannbinoid concentration analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening 6. Pesticide screening"
Danielle Rosellison	WAC 314-55-102.4(c)(iv)	"Intermediate products table; apply to all boxes under "Tests Required"" Suggestion: "1. Moisture content 2. ~~Potency analysis~~ Cannbinoid concentration analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening 6. Pesticide screening"
Danielle Rosellison	WAC 314-55-102.6	"All stuff regarding remediation. Looks great!!"
Danielle Rosellison	WAC 314-55-102.6(c)	"Pesticide failures may not be remediated." Why? This should be allowed with board approval as the science continues to evolve. At least give the option... Suggestion: "Pesticide failures may not be remediated <u>unless approved by the Board</u>."
Danielle Rosellison	WAC 314-55-102.6(c)(iv)	"(iv) If a failed quantity of marijuana is not remediated or reprocessed in any way, it cannot be retested. Any subsequent certificates of analysis produced without remediation or reprocessing of the failed quantity of marijuana will not supersede the original compliance testing certificate of analysis." Suggestion: "(iv) If a failed quantity of marijuana is not remediated or reprocessed in any way, it cannot be retested <u>unless aproved by the Board</u>. Any subsequent certificates of analysis produced without remediation or reprocessing of the failed quantity of marijuana will not supersede the original compliance testing certificate of analysis <u>unless approved by the Board</u>."
Matt Heist Robert Haddad		Hello,

		Thank you for hosting the session on Cannabis Testing and discussing the draft conceptual rules. We have the following comments with regards to that discussion. WAC 314-55101 Sec. 1 part C: Please include a requirement for a unique Sample ID for every sample • Comments: A unique sample ID is absolutely necessary to identify all samples submitted to a lab. WAC 314-55101 Sec. 3 part B: (Changing the lot size) • Comments: This was an unexpected, dramatic and seemingly arbitrary proposal in testing requirements. Labs currently test 6 grams out of every 2,240 grams sold (5lb lot). According to these conceptual rules, labs will still test 6 grams regardless if the lot is 2,240 grams (5 pounds) or nearly 22,400 grams (50 pound lot). Clearly, meaningfulness of the results from that single battery of tests significantly decreases as the lot size grows. While we can appreciate a desire to decrease a financial burden on producers and processors, reducing the current testing frequency does not appear to coincide with LCB mandate of public safety. Current testing costs are minimal when compared to overall costs involved, e.g., 8 cents per gram at our facility per 5 pounds. In addition, we are unaware of any grower or processor having indicated that current testing requirements are burdensome, either during the meeting or elsewhere. To the contrary, several comments by growers during the meeting indicated concern regarding decreasing validity with increasing lot sizes and corresponding risks involved with potential failures of larger lot sizes. Accordingly, we agree with the commenters that support the current rules involving 5 pound lots. The pending economic impact analysis may indicate the costs involved in pesticide testing are onerous. If so, requirements should be addressed as a separate matter with larger lot sizes allowed for pesticide testing specifically, leaving other testing requirements at 5lbs. Thank you for your time, Matt Heist Robert Haddad
Holly Lorentson		Page 3 Section C. Sample Labelling Lot Size should also be required to be labelled on the sample. Otherwise, how will labs know if the proper amount of sample is provided. ▪ Page 5 Section B. Lot Sizes Is the expectation that the lab is to grind and homogenize the entire sample quantity? The new rules also say that we are supposed to receive and test sample “as is”. Please provide guidance. The sample size for the larger lots is too large to get an accurate result for microbial and mycotoxin due to microbial and mycotoxins not necessarily being dispersed evenly throughout an entire lot. Has an economic impact study been performed on behalf of the laboratories? The new lot size requirement potentially reduces the samples to be tested by the laboratories by a factor of 10. ▪ Page 6 Section 4 Sample Retrieval and Transportation. Does this prohibit third party transportation services? ▪ Page 6 Section 5. Laboratory Sample Rejection of Failure. Are the expectations that the lab weighs each flower and verifies the weight and number of 1g flowers and that both the weight of each flower and the number of flowers meet the minimum lot size sampling requirements? Is the lab required to reject samples that do not exactly meet the sample criteria listed per each lot? Example 1. 50-pound lot. 17 one-gram flowers and one 0.5-gram flower.

		Example 2. 50-pound lot. Nine one-gram flowers and nine 0.75-gram flowers. Example 3. 50-pound lot. 15 one-gram flowers. Example 4 50-pound lot. Nine two-gram flowers. Example 5 50-pound lot. One Hundred 0.20-gram flowers. Some producers send in “popcorn” style samples (very small buds). Does this type of sample need to be rejected? Even if it meets weight requirement for the lot. If the expectation is that some leeway will be allowed, please do not write the lot size sampling requirement so specifically. ▪ Page 9 Section 1 (iiia) Lab certification and accreditation Requires labs be certified for pesticides and mycotoxins, but later states (P11 Section C) that labs can subcontract out for these tests. Please clarify and edit one of the two sections. It would make more sense to state “that a lab can only report data for tests that they are certified by the WSLCB.”. A lab shouldn’t need to be certified for every test, but only allowed to report data for the tests they are certified for. Example 1. A lab only wants to test edible samples. That lab should only have to be certified for cannabinoid profile. Example 2. A lab only would like to analyze flower samples. That lab does not need to be certified for residual solvent testing. ▪ Page 14 Section 2a- General Quality Control testing requirements “Certified labs must record an acknowledgment of the receipt of samples from producers or processors. Certified labs must also verify if any unused portion of the sample is destroyed after the completion of required testing.” This should state that the “Certified labs must also verify when any unused portion of the sample is destroyed after the completion of required testing.” This section should outline a timeline for labs to dispose of samples after testing. I would suggest 3 months. ▪ Page 19 2c- General Quality Control testing requirements “Certified labs must fail a sample if the results for any limit test are above allowable levels regardless of whether the limit test is required in the testing tables in this chapter. “ Please clarify. Does this apply to non-mandatory samples or just mandatory samples? ▪ Page 20 Section 3a Cannabinoid Concentration If these are the only cannabinoids labs must report (THC-THCA-I502THC-CBD-CBDA-I502CBD), then these should be the only cannabinoids that producers/processors should be allowed to put on package labels and that labs should be allowed to put on the COA. If Delta 8 is something that producers/processors are not supposed to have in their products, then this needs to be a required cannabinoid to test for with a failing limit. For example, any product above 0.5% D8-THC is a failure. Any edible with 0.5mg/service D8-THC is a failure. ▪ Page 28 4c Intermediate Products- Required quality control tests ▪ (ii) Marijuana mix must be chopped or ground, so no particles are greater than 3 mm Why is this a requirement? Are labs expected to reject samples that do not meet this requirement? Are labs expected to sieve the lot to verify compliance.? Is there any leeway (10% of the lot by weight can be above 3mm)? ▪ Page 29 4c (v) Intermediate Products- Required quality control tests (v)A single serving may not exceed ten milligrams active tetrahydrocannabinol (THC) consistent with WAC 314-55-095(1)(a). This should specify that this requirement is for edible products only.

		Please provide more explanation. Currently we enter edibles in mg/g. If we are supposed to fail edibles that are over 10 mg/serving, what is the serving size of the candy? Is it the weight of the candy tested, or the weight stated on the package? Is there any variance allowed for production size? The lab weighs out the package of candy and the packaging states 5g candies and the weights of the actual candies vary from 4-6 grams due to variances in production. The lab tests a 5.8g candy and the result is above 10mg/serving. ▪ Page 25 Section 4 Required quality control tests Cannabis is an agricultural product, and the pesticide testing should be treated as such, tested at the farm or harvest level. Testing pesticides at individual lot levels will slow down the turnaround of lab testing as there are only 5 certified labs for pesticides at this time. • General Question How many significant figure are labs supposed to report to? And what is the rounding rule for the significant figure? Example: 10.02mg/serving Would this round down to 10mg/serving?
Daniel Solaro		Hello, I own Aspen Hollow Tier 3 outdoor producer in Okanogan County. Inconsistent and false test results have forced our farm to temporarily suspend grow operations. There are lawsuits alleging collusion between testing businesses and retailer/distributors and I am waiting to see how the court cases play out. I might join a class action and have talked to attorneys involved. I know for a fact that test samples are tampered with and that results are manipulated. This has cost us thousands of dollars and put us in a precarious postion. In my opinion, a state agency should do all the testing. The margin of error and imprecision of the methodology should lead to a system where product is graded as strong, medium. or mild. Any labeling based on exact thc percentage is sure to be misleading, and only encourages fraud. My two cents.
John Kingsbury		RE: QA rulemaking comments Ms. Hoffman, First, thank you for your deep, thoughtful work on the mammoth project of defining and adopting quality assurance rules. While I am frustrated by the amount of time this is taking, nearly six years after the first 502 stores opened. I am heartened by the fact that so much work is being put into this. I am heartened by the fact that your office, and LCB generally, has been willing, even after a pile of work has been put in, to stop and say "Let's stop here and reconsider all of this. Let's scrap that section of the work and begin again." That willingness has, in the past, been uncharacteristic of the way that LCB has worked. Although that approach is slow and time-consuming, I believe it is worth it, because this right matters. During the fall of 2018, I sent a petition to the LCB and to the Governor's office asking him to declare a health emergency based on the lab results that indicated that, not only was the pesticide failure rate of cannabis samples tested by Department of Agriculture in excess of 43%, but the samples of product taken from shelves were consistently failing pesticide testing at a rate in excess of 37%. That

		meant that consumers were assured to be consuming disallowed levels of pesticides during one of every third consumption. This work matters. Public safety should always trump everything else. I am aware that LCB has hired an economist to consider costs associated with testing. During my activism, I have spoken with many farmers. I have made friends with them. I have tested samples myself and I appreciate that testing is costly. I appreciate their business pressures. Considering costs is an appropriate part of your long work. However, I was very frustrated by the Sungrower's claim in their original letter to LCB about QA rules that made the assertion that, to paraphrase, high-quality testing was not necessary because patients had "medical" (by which she meant DOH Compliant) cannabis and if we needed clean cannabis, we could buy that. Of course, that is a false statement. During the rare occasions that I shop at 502 stores, I always ask for DOH Compliant/WAC 246-70 product but I rarely find it. Such a rationalization is not only dishonest, but unethical, because it throws patients' safety under the bus to set a lower floor of quality so her farmers can save money. I personally expressed this concern to Crystal Oliver. I do not think she appreciated the seriousness of what I was saying Still, I understand the struggle of farmers. Small farming of any crops is a tough racket. But I also know patients. And hygiene and safety matter –sometimes critically. You were not here when licensees began operating. At that time, most of the system was built on the premise that patients were phony and our doctors were lying, and all that was required was some lip service and some promises that would not really need to be kept. While that attitude has lessened, that bigotry still remains with too many, and it is the foundation on which a lot of the current regulated system was built and continues to operate. It looks like this: We will require that patients meet a high bar and register to adequately meet their needs, but then we won't really legalize their activities; we will just give them an affirmative defense once they get to court. If patients want to be on the right side of the law, be quiet and buy rec weed. We will have DOH determine a medically appropriate level of quality, but we won't actually require stocking it in stores, and we will generally advocate policies that disincentivize it, so you can't really find it. Shut up and buy rec weed, or be criminals and search for more appropriate access in the black market. This was the premise on which much of our system was built. And it continues on the back of citizens who already face too many big life challenges. But while the flow chart always leads all patients to "Shut up and buy rec weed or be criminals" LCB and the state of Washington have never kept up their part of the deal. Here is where I am going with this. If the end answer is always "Quit complaining and buy high-THC, low-grade rec weed", then the state has a responsibility to set the quality assurance floor at a place where the majority of patients can feel safe with rec weed. If LCB wants to persist with the view that "the only difference between medical use and recreational use is the intent of the user", then then it is absolutely incumbent upon the State to set a floor of quality for recreational product that accommodates the risks for the majority diagnosed and documented patients. Here is where I suggest that QA floor needs to be: Total molds: There needs to be cap on the allowed levels of total molds. These high mold levels are making patients sick. I could explain how I got to that assertion. I am not sure that there is another state that does not limit total molds. Most states cap it at 10,000 CFUs. I have a vague, imperfect memory that Washington State once had a cap on total molds but too many lots were failing so LCB responded by removing the requirement. That makes sense: lowering the bar has traditionally been LCB's response to solving problems. But it is making people ill. I regularly see total mold levels above 100,000 CFUs in Washington product, and it tends to be in the cheap stuff, the stuff patients often buy because patients tend to be poor as a result of their illnesses. To Russ's point on August 31st, we should set the level somewhere that it could be sold across state lines when that time comes. With our mold and pesticide levels now, nobody from another state is going to buy the stuff. Might that raise costs? Sure. But do we need $70 ounces if they are unfit for human consumption? No. My opinion is, if a farmer can't keep their molds below 50,000 CFUs, let them fail. We have overproduction now. The cure for overproduction and low margins is fewer farmers. My opinion is to set the rules so the dirtiest farmers fail first. When state barriers come down, we don't want to be known as the cheap Chinese crap of cannabis -that is what we have

		Oregon for (Oregon has total mold and mandatory pesticide testing, by the way). Besides pushing patients into the black market, these rock bottom standards are going to disqualify us from being competitive across state lines. So, where should the limit be? There are two ways to look at it: 1. Again, one way to be to set the standard so that Washington product will be sellable in other states. No limit doesn't get us there. 2. Another way to set the standard is less exact. Every time a patient has handed me the remains of an ounce and said that it is making them ill, the told molds were at 70,000 CFUs or above. Set the standard lower than that. Azadirachtin, neem and neem derivatives. This stuff is a deal-breaker for most patients. It is persistent. It can even be generational, from mothers to clones to harvested plants. It is very common in product labeled "organic". Sometimes "organic" products are bathed in the stuff. There is no reason to believe it is safe - especially in inhaled products. Last session I saw one of the volunteer "prevention" people asserting in testimony that hyperemesis syndrome was related to the use of high-THC concentrates. OK, well there is no evidence for that, but prevention people asserting wacky, unsupportable claims is part of the colorful, predictable tapestry of life. But, I can tell there is plenty of evidence that hyperemesis syndrome is caused by heavy exposure to neem derivatives. Just as it builds up in plant tissues, it builds up in human tissues. And perhaps the reason hyperemesis is becoming increasingly linked to concentrates is because the stuff is persistent, and it isn't the concentration of THC in those concentrates, but rather the concentration of azadirachtin or other neem derivatives. Patients can be heavier users of cannabis, so they rightfully fear the stuff. And if you are already dealing with physical infirmities, the prospect of adding hyperemesis syndrome on top of those becomes a deal breaker. In view of that, I would like to make a compromise suggestion. Rather than testing for neem agents (which I would greatly prefer), I suggest labeling, so that consumers can choose for themselves. If I can know whether there is bovine growth hormone in my milk, it seems reasonable that I should be able to know whether there is azadirachtin in my cannabis product. Again, this should be floor for quality. In any case, the affects of the accumulations of neem agents must continue to be studied. Meaning of labeling: We need a rule by which consumers can know what logos and labels meaning. Take the example of Clean Green Certified. When I have asked for DOH Compliant product, and been denied, often product labeled "Clean Green" has been the budtender's go-to suggestion. It sounds good. "Clean" sounds good. "Green" sounds good. But I have yet to meet a budtender who can tell me what it means. Almost no budtenders can correctly tell me what "organic" means. I have written to this company seven times over the years, asking them what "Clean Green" means in terms of pesticide application. I have yet to receive a response. The lead of the WSDA organics program told me a hilarious story about the lengths they went to try and figure out what it meant: even going so far as setting up a fake llc to request an application for Clean Green certification in hopes that application might shine some light on what it means. I know what the "Tested by Confidence" logo means, but that is because they answered my questions. Half the bud tenders who sell it are guessing what it means. I am in favor of extra assurance. But if consumers and budtenders cannot be able to know what these things mean, then these logos are just advertising. There ought to be a requirement that, if you are selling quality assurance logos, then what those logos mean needs to be public and accessible. Action levels generally. With the exceptions of neem-dervivatives and total molds, I am OK with the established action levels, because I do not have better information. Concentrates must be tested at the end of the product. My random secret shopper tests are yielding a 2/3rds failure rate, so far. And, browsing through some of the weird things that are popping up in them, my guess is that the source material is from questionable sources. Lot size Lot size is an area where comfort-level battles farmer costs. Therein lies a balancing act. I am not comfortable with farm-level testing. I am OK with 10 pound lots. I would be comfortable with pesticide testing of single

		harvests, but what about farms that are constantly rotating flowers out of veg and into flowering, and strains have different flowering times; so, what does that make a single harvest look like? How about, rather than farm level testing, there was a room-square footage requirement. For example: Four samples per room. to a room maximum size of 3,000 square feet, regardless of strain, not including mold and mycotoxin testing. That seems liberal. Total molds and mycotoxins must be tested per strain in any case. Every farmer knows that different strains, even grown in the same, tight space, has different vulnerabilities to mold. Some molds are systemic. No self-sampling. An outside party needs to be responsible for pulling samples. For obvious reasons, the farm cannot decide who that outside party is. Just to reiterate, if LCB needs to set a standard that takes into account the safety of a majority of patients – period. Those are my comments about establishing a quality assurance floor with an eye to fairness to farmers. Thanks for your thoughtfulness and quality work. John Kingsbury
Nick Mosely		The following suggestions are provided as improvements to the document named Quality_Control_Conceptual_Draft_10202021.pdf downloadable from the following address as of 10/22/2021: (https://lcb.wa.gov/sites/default/files/publications/rules/2021%20Proposed%20Rules/Quality_Control_Conceptual_Draft_10202021.pdf). Prior to creating these suggestions, the document described above was converted to a Microsoft Word (.docx) format and all redlines were approved by deleting text with strikethrough and retaining text without strikethrough. The suggestions provided here are presented as relines after the above mentioned approvals. Suggestions are made in response to observed comments provided by attendees at the October 20th, 2021 Listen and Learn Session on Cannabis Testing – Draft Conceptual Rules hosted by the WSLCB rules staff. The comments were provided by members of the public and cover the following topics: ● Pesticide screening at harvest level. Comment was provided by several attendees that rather than deduct large samples from "arbitrary" lot sizes, the pesticide test should be conducted at the "harvest level." ○ Pursuant to this recommendation, WAC 314-55-101 subsections 3a and 3c and WAC 314-55-102 subsection 3h have been edited to provide for flexibility reflective of the desire to optionally screen marijuana flower at the harvest level. ● Cannabinoid ranges. Comment was provided by attendees requesting that cannabinoid concentration be reported as ranges because there exists true variance in any marijuana flower lot and a single measurement of a population represents low statistical power. Homogenizing one large sample does not improve statistical power over taking separate measurements of multiple samples. ○ Pursuant to this recommendation, WAC 314-55-101 subsections 3a and 3b and WAC 314-55-102 subsection 3a have been edited to allow averaging of results from lots originating from the same harvest. Statistically speaking, averaging multiple samples in this manner will provide numbers for the label closer to the true average for the harvest (n>1). ○ Additionally, ranges could be enforced as ± 3 standard deviations of the average for multiple results from the same harvest. Such a suggestion has not been made to the test of this document. ● Representative samples. Comment was provided by several attendees to the effect that increasing population size without a corresponding increase in number of individually measured samples decreases statistical confidence in the results. ○ Pursuant to this recommendation, WAC 314-55-101 subsection 3 has been edited to continue the

		current paradigm of one sample per 5 lb lot, with the exception of the pesticide screening, as described above. ○ Also pursuant to this recommendation, language from the original text has been re-inserted stating "must be representative of the marijuana flower lot." ● Sample size. Comment was provided by several attendees that sample sizes need not exceed 4 grams, as the labs do not require larger samples and no rule was provided for homogenization of larger samples. ○ Pursuant to this recommendation, WAC 314-55-101 subsection 3 has been edited to continue the current paradigm of one 4 gram sample per lot (minimum). ○ Additional comment was provided that some lots of marijuana flower contain pieces smaller than 1 gram which could make compliance with the sampling requirements of WAC 314-55-101 subsection 3 difficult. An edit has been provided to that section clarifying that each deduction may consist of more than one piece but must not be less than one gram. The following suggestions are made in consideration of motions and recommendations made by the Cannabis Science Task Force (CSTF), enacted by the 2019 legislature: ● Cannabinoid concentration results should be rounded to two significant figures after any relevant calculations and before labeling packages for retail sale. This is consistent with other amendments already made in the conceptual draft rules, wherein all of the limit tests have been reduced to two significant figures, and is consistent with CSTF recommendations. ○ Pursuant to this recommendation, WAC 314-55-102 subsection 3a has been edited to require rounding of results prior to labeling and after all calculations are complete. ○ Similarly, the table in WAC 314-55-102 3f has been edited in two places to maintain a consistent 2 significant figures. ● Moisture content is a redundant test, impossible to standardize without dramatically increasing cost, and providing little value. For these reasons, and as documented in the public record at CSTF Steering Committee Meetings, the chemical work group has recommended removing the moisture content test from the product standards rules. The water activity test is more than sufficient for monitoring moisture, is a better indicator of shelf stability, and it is impossible for a marijuana flower sample to fail the moisture content test while also passing the water activity test. ○ Pursuant to this recommendation, WAC 314-55-102 subsection 3b has been amended to remove moisture content as a requirement. The following suggestions are made for general cleanup, consistency, and readability of the rules: ● To maintain consistency with WAC 314-55-102 subsection 3a "Cannabinoid concentration analysis," the term "potency" has been replaced with "cannabinoid concentration" throughout the document. ● WAC 314-55-102 subsection 3g has been edited to remove an unnecessary list identifier "(i)." ● Maintaining consistency with the residual solvent screening section in WAC 314-55-102 subsection 3f, the pesticide screening section WAC 314-55-102 subsection 3g has been edited to clarify that the list in WAC 314-55-108 is the list of pesticides that certified labs must test to, when required, at a minimum. Finally, this document recommends allowing remediation of lots and batches that fail pesticide screening. Without such an allowance, the rule proposal is likely to meet significant opposition from licensees that are in the business of remediating product that has (or would have) failed pesticide screening. While it is understood that the board desires products to be free of pesticide

		residues at the time of harvest, the reality is that they often are not. Remediation of failed products is doable using conventional techniques that don't require the addition of potentially harmful substances, and this is generally a good thing. Furthermore, remediation is often taking place at processor licensed locations which are removed from the cultivation process that resulted in the contamination. It is recommended that the WSLCB pursue punitive action against non-compliant licensees through means other than restricting the utilization of safe and effective remediation strategies. For consideration: remediation of failed harvests, lots, or batches is specifically allowed under WAC 314-55-108, which is not under consideration in this rulemaking. —— WAC 314-55-101 Quality control sampling. (1) All licensed marijuana processors, producers, certified labs, and certified lab employees must comply with the sampling procedures described in this section, consistent with RCW 69.50.348. Noncompliance may result in disciplinary action as described in this chapter and applicable law. (2) Sample collection. All samples of marijuana, usable marijuana, or marijuana-infused products must be submitted to a certified lab for testing consistent with this chapter. (a) All samples must be deducted, stored, and transported in a way that prevents contamination and degradation. (b) To maximize sample integrity, samples must be placed in a sanitary container and stored in a location that prevents contamination and degradation. (c) Each quality control sample container must be clearly marked “quality control sample” and labelled with the following information: (i) The certificate number and name of the certified lab receiving the sample; (ii) The license number and registered trade name of the licensee sending the sample; (iii) The date the sample was collected; and (iv) The weight of the sample. (d) Sampling and analysis requirements apply to all marijuana products regulated by the board. (3) Additional sampling protocols for flower lotsquantities of marijuana flower: (a) Samples must be collected using a minimum of four separate deductions from each marijuana flower lot up to five pounds. Each deduction from the marijuana flower lot must be of roughly equal weight not less than one gram each, and must be representative of the marijuana flower lot. Each deduction from the marijuana flower lot may consist of more than one piece. Licensees or certified labs may collect more samples than this minimum, but must not collect less. Each sample must be deducted from a harvest as defined in WAC 314-55-010(14). (b) For the purposes of the cannabinoid concentration analysis, test results from multiple marijuana flower lots originating from the same harvest as defined in WAC 314-55-010(14) and submitted to the certified lab at the same time may be averaged when labeling packages of marijuana flower that will be sold as usable flower.For marijuana flower weighing up to 10 pounds, a minimum of 8 samples must be taken. (c) For the purposes of pesticide screening, when multiple marijuana flower lots originating from the same harvest as defined in WAC 314-55-010(14) are submitted to the certified lab at the same

		time, the certified lab may randomly designate one sample to represent all other samples originating from the same harvest. For marijuana flower weighing 10 pounds or more but less than 20 pounds, a minimum of 12 samples must be taken. ¶ ¶ (d) For marijuana flower weighing 20 pounds or more but less than 30 pounds, a minimum of 15 samples must be taken. ¶ ¶ (e) For marijuana flower weighing 30 pounds or more but less than 40 pounds, a minimum of 18 samples must be taken. ¶ ¶ (f) For marijuana flower weighing 40 pounds or more but not more than 50 pounds, a minimum of 19 samples must be taken. (4) Sample retrieval and transportation. Certified labs may retrieve samples from a marijuana licensee's licensed premises and transport the samples directly to the lab. (5) Certified labs may must reject or fail a sample if the lab has reason to believe the sample was not collected in the manner required by this section, adulterated in any way, contaminated with known or unknown solvents, or manipulated in a manner that violates the sampling protocols, limit tests, or action levels. WAC 314-55-102 Quality assurance testing and quality control. (1) Lab certification and accreditation for quality control testing. To become certified, a third-party lab must meet the board's certification and accreditation requirements as described in WAC 314-55-0995 and this chapter before conducting quality control tests required under this section. (a) Certified labs must be certified to conduct the following fields of testing: (i) Moisture analysis; (ii) Cannabinoid concentrationPotency analysis; (iii) Foreign matter inspection; (iv) Microbiological screening; (v) Mycotoxin screening; (vi) Pesticide screening; and (vii) Residual solvent screening. (b) Certified labs may be certified for heavy metal testing. Certified labs must comply with the guidelines for each quality control field of testing described in this chapter if they offer that testing service. (c) Certified labs may reference samples for mycotoxin, heavy metal, or pesticide testing by subcontracting for those fields of testing. (2) General quality control testing requirements for certified labs. (a) Certified labs must record an acknowledgment of the receipt of samples from producers or processors. Certified labs must also verify if any unused portion of the sample is destroyed after the completion of required testing. (b) Certified labs must report quality control test results directly to the board in the required format. (c) Product must not be converted, transferred, or sold by the licensee until the required tests are reported to the board and the licensee. (d) Certified labs must fail a sample if the results for any limit test are above allowable levels

		regardless of whether the limit test is required in the testing tables in this chapter. (e) Certified labs must test samples on an "as is" or "as received" basis. (3) Quality control analysis and screening. The following analysis and screening are only required for samples that have not been previously tested, or that have failed quality control testing. (a) Cannabinoid concentration analysis. (i) Certified labs must test and report the following cannabinoids to the board when testing for cannabinoid concentrationpotency: (A) THCA; (B) THC; (C) Total THC; (D) CBDA; (E) CBD; and (F) Total CBD. (ii) Calculating total THC and total CBD. (A) Total THC must be calculated as follows, where M is the mass or mass fraction of delta-9 THC or delta-9 THCA: M total delta-9 THC = M delta-9 THC + (0.877 x M delta-9 THCA). (B) Total CBD must be calculated as follows, where M is the mass or mass fraction of CBD and CBDA: M total CBD = M CBD + (0.877 x M CBDA). (iii) Cannabinoid concentration analysis results from multiple marijuana flower lots originating from the same harvest as defined in WAC 314-55-010(14) may be averaged when labeling packages of marijuana flower sold as usable flower. (iv) Cannabinoid concentration analysis results must be rounded to two significant figures prior to labeling marijuana products for sale. Such rounding must occur only after all calculations described in this section have been completed. (v) Regardless of analytical equipment or methodology, certified labs must accurately measure and report the acidic (THCA and CBDA) and neutral (THC and CBD) forms of the cannabinoids. (b) Moisture analysis. The sample fails quality control testing for moisture analysis if the results exceed a water activitythe following limits:¶ (i) Water activity rate of more than 0.65 aw for usable marijuana;¶ (ii) Moisture content more than fifteen percent. (c) Foreign matter screening. The sample fails quality control testing for foreign matter screening if the results exceed the following limits: (i) Five percent of stems 3mm or more in diameter; or (ii) Two percent of seeds or other foreign matter; or (iii) One insect fragment, one hair, or one mammalian excreta in sample. (d) Microbiological screening. The sample and the related population fails quality control testing for microbiological screening if the results exceed the following limits: Unprocessed Plant Material Bile Tolerant Gram Negative bacteria (BTGN) Shiga toxin-producing Escherichia coli (STEC) Salmonella spp. Colony Forming Unit per Gram (CFU/g)

		1.0 * 10^4 <1 <1 Processed Plant Material Bile Tolerant Gram Negative bacteria (BTGN) Colony Forming Unit per Gram (CFU/g) 1.0 * 10^3 Shiga toxin-producing Escherichia <1 coli (STEC) Salmonella spp. <1 (e) Mycotoxin screening. The sample and the related population fails quality control testing if the results exceed the following limits: Mycotoxin Aflatoxins (Sum of Isomers) ● Aflatoxin B1 ● Aflatoxin B2 ● Aflatoxin G1 ● Aflatoxin G2 Ochratoxin A ug/kg 20. 20. CAS # 1162-65-8 7220-81-7 1165-39-5 7241-98-7 303-47-9 (f) Residual solvent screening. Except as otherwise provided in this subsection, a sample and the

		related population fails quality control testing for residual solvents if the results exceed the limits provided in the table below. Residual solvent results of more than 5,000 ppm for class three solvents, 50 ppm for class two solvents, and 2 ppm for any class one solvents as defined in United States Pharmacopoeia USP 30 Chemical Tests / <467> - Residual Solvents (USP <467> not listed in the table below fail quality control testing. When residual solvent screening is required, certified labs must test for the solvents listed in the table below at a minimum. Solvent Acetone Benzene Butanes (Sum of Isomers) ● n-butane ● 2-methylpropane ug/g 5.0 * 10³ 2.0 5.0 * 10³ ppm (simplified) 5000 2 5000 CAS # 67-64-1 71-43-2 106-97-8 75-28-5 (isobutane) Cyclohexane Chloroform Dichloromethane Ethyl acetate Heptanes (Single Isomer) ● n-heptane Hexanes (Sum of Isomers) ● n-hexane

		● 2-methylpentane ● 3-methylpentane ● 2,2-dimethylbutane ● 2,3-dimethylbutane Isopropanol (2-propanol) Methanol Pentanes (Sum of Isomers) ● n-pentane ● Methylbutane (isopentane) ● Dimethylpropane (neopentane) Propane Toluene Xylenes (Sum of Isomers) ● 1,2-dimethylbenzene (ortho-) ● 1,3-dimethylbenzene (meta-) ● 1,4-dimethylbenzene 3.9 * 10³ 2.0 6.0 * 10² 5.0 * 10³ 5.0 * 10³ 2.9 * 10² 5.0 * 10³ 3.0 * 10³ 5.0 * 10³ 5.0 * 10³ 8.9 * 10² 2.2 * 10³ 39003880 2 600 5000 5000 290 5000 3000 5000 5000 890 22002170 110-82-7

		7-66-3 75-09-2 141-78-6 141-82-5 110-54-3 107-83-5 96-14-0 75-83-2 79-29-8 67-63-0 67-56-1 109-66-0 78-78-4 463-82-1 74-98-6 108-88-3 95-47-6 108-38-3 106-42-3 (para-) (g) Heavy metal screening. Heavy metal screening is required for all DOH compliant product as described in chapter 246-70 WAC. Heavy metal screening is optional for non-DOH compliant product; however heavy metal limits provided below apply to all products. Any product exceeding the provided

		limits is subject to recall and destruction. The board may conduct random or investigation driven heavy metal screening for compliance. ¶ (i) A sample and related quantity of product fail quality control testing for heavy metals if the results exceed the limits provided in the table below. Metal Arsenic Cadmium Lead Mercury ug/g 2.0 0.82 1.2 0.40 (h) Pesticide screening. For purposes of pesticide screening, when multiple marijuana flower lots originating from the same harvest as defined in WAC 314-55-010(14) are submitted to the certified lab at the same time, the certified lab may randomly designate one sample to represent all the other samples originating from the same harvest. Aa sample and the related quantity of marijuana is considered to have passed pesticide screening if it meets the standards described in WAC 314-55-108 and applicable department of agriculture rules. When pesticide screening is required, certified labs must test for the pesticides listed in WAC 314-55-108 at a minimum. (4) Required quality control tests. The following quality control tests are required for each of the marijuana products described below. Licensees and certified labs may opt to perform additional quality control tests on the same lot. (a) Marijuana flower requires the following quality control tests: Product Marijuana flower Test(s) Required 1. Moisture analysis 2. Cannabinoid concentrationPotency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening 6. Pesticide screening (b) If marijuana flower will be sold as usable flower, no further testing is required. (c) Intermediate products. Intermediate products must meet the following requirements related to quality control testing: (i) All intermediate products must be homogenized prior to quality assurance testing; (ii) For the purposes of this section, a batch is defined as a single run through the extraction or infusion process; (ii) Marijuana mix must be chopped or ground so no particles are greater than 3 mm; and (iv) Intermediate products require the following quality assurance tests:

		Intermediate Product Type Marijuana mix Concentrate or extract made with hydrocarbons (solvent based made using n-butane, isobutane, propane, heptane, or other solvents or gases approved by the board of at least 99% purity) Concentrate or extract made with a CO2 extractor like hash oil Concentrate or extract made with ethanol Tests Required 1. Moisture content 2. Cannabinoid concentrationPotency analysis 3. Foreign matter inspection 4. Microbiological screening 5. Mycotoxin screening 6. Pesticide screening 1. Cannabinoid concentrationPotency analysis 2. Mycotoxin screening 3. Residual solvent test 4. Pesticide screening 1. Cannabinoid concentrationPotency analysis 2. Mycotoxin screening 3. Residual solvent test 4. Pesticide screening 1. Cannabinoid concentrationPotency analysis Concentrate or extract made with approved food grade solvent Concentrate or extract (nonsolvent) such as kief, hash, rosin, or bubble hash Infused cooking oil or fat in solid form 2. Mycotoxin screening 3. Residual solvent test 4. Pesticide screening 1. Cannabinoid concentrationPotency analysis 2. Microbiological screening 3. Mycotoxin screening 4. Residual solvent test 5. Pesticide screening 1. Cannabinoid concentrationPotency analysis 2. Microbiological screening 3. Mycotoxin screening 4. Pesticide screening 1. Cannabinoid concentrationPotency analysis 2. Microbiological screening

		3. Mycotoxin screening 4. Pesticide screening (v) Intermediate products that pass the required quality control testing may be sold or added to an end product, with no further testing of the intermediate product required. A single serving may not exceed ten milligrams of active tetrahydrocannabinol (THC) consistent with WAC 314-55-095(1)(a). (5) Usable flower, batch of marijuana concentrate, or batch of marijuana-infused product may not be sold until the completion and successful passage of required quality control testing, except: (a) Licensees may wholesale and transfer batches or quantities of marijuana flower and other material that will be extracted and marijuana mix and nonsolvent extracts for the purposes of further extraction prior to completing required quality control testing. (b) Licensees may wholesale and transfer failed batches or quantities of marijuana flower to be extracted pursuant to subsection (6) of this section, unless failed for tests that require immediate destruction. (6) Failed test samples. (a) Upon approval by the board, failed quantities of marijuana or batches may be used to create extracts. After processing, the extract must pass all quality control tests required in this section before it may be sold, unless failed for tests that require immediate destruction. (b) Retesting. A producer or processor must request retesting. The board may authorize the requested retest to validate a failed test result on a case-by-case basis. The producer or the processor requesting the retest must pay for the cost of all retesting. (c) Remediation. Remediation is a process or technique applied to quantities of marijuana flower, lots, or batches. Remediation may occur after the first failure, depending on the failure, or if a retest process results in a second failure. Pesticide failures may not be remediated. (i) Producers and processors may remediate failed marijuana flower, lots, or batches so long as the remediation method does not impart any toxic or harmful substance to the usable marijuana, marijuana concentrates, or marijuana-infused product. Remediation solvents or methods used on the marijuana product must be disclosed to: (A) A licensed processor; (B) The producer or producer/processor who transfers the marijuana products; (C) A licensed retailer carrying marijuana products derived from the remediated marijuana flower, lot, or batch; or (D) The consumer upon request. (ii) The entire quantity of marijuana from which the failed sample(s) were deducted must be remediated. (iii) No remediated quantity of marijuana may be sold or transported until quality control testing consistent with the requirements of this section is completed. (iv) If a failed quantity of marijuana is not remediated or reprocessed in any way, it cannot be

		retested. Any subsequent certificates of analysis produced without remediation or reprocessing of the failed quantity of marijuana will not supersede the original compliance testing certificate of analysis. (7) Referencing. Certified labs may reference samples for mycotoxins, heavy metals, and pesticides testing to other certified labs by subcontracting for those fields of testing. Labs must record all referencing to other labs on a chain-of-custody manifest that includes, but is not limited to, the following information: Lab name, certification number, transfer date, address, contact information, delivery personnel, sample ID numbers, field of testing, and receiving personnel. (8) Certified labs are not limited in the amount of usable marijuana and marijuana products they may have on their premises at any given time, but a certified lab must have records proving all marijuana and marijuana-infused products in the certified lab's possession are held only for the testing purposes described in this chapter. (9) The board, or its designee, may request that a licensee or a certified lab provide an employee of the board or their designee samples of marijuana or marijuana products, or samples of the growing medium, soil amendments, fertilizers, crop production aids, pesticides, or water for random or investigatory compliance checks. Samples may be randomly screened and used for other quality control tests deemed necessary by the board.
John Kingsbury		Mr. Kildahl, Thank you for getting back to me. I was preparing a longer response but my power keeps cutting out. I am a stakeholder by virtue of being a patient, who, like many other patients, has dropped out of the 502 system, in large part due to product hygiene concerns, and because of my ability to buy cleaner product from the unregulated system. I would like to have a 502 system that I could participate in. In any case, with rulemaking deadlines approaching, and with people preparing for the upcoming legislative session, a good number of (mostly license-holder) stakeholders have approached me, asking for my support of whatever their ideas are. Some of the ideas brought to me have been truly terrible. During these discussions, I have heard a couple of common themes. During these discussions I proposed an alternative idea, which has, so far, been enthusiastically received by nearly everyone, except for a very small group of farmers, who I perceive do not want their product tested. On the downside, my idea would require legislative action. The two themes have been: 1. That self-sampling will not work well. Self-sampling would inevitably lead to cheating. I have heard this concern from everyone, and I agree with it. We should not build a system with cheating built into it. 2. The cost of testing. This cost would be made worse if contractors or state employees were responsible for collecting samples. Some farmers have complained that the cost of testing would be inequitable for smaller farmers. I do not have an opinion about that. Rather than having a system that everyone is unhappy with, I would like to make a suggestion that almost everyone can be happy with -and this explains why I asked Ms. Hoffman about cost. As a patient who would like to participate in the regulated system, who feels like people like me deserve to have the best QA system, rather than continuing to have the worst, especially in the near-absence of DOH Compliant

		product, I advocate the idea of a statewide testing system, paid for either with existing cannabis excise tax revenues, or by an increase in the excise tax rate, or by a hybrid of the two. By this method, samples could be collected either by WSDA (if that is something they want to deal with), or by contractors. This would address the self-sampling concerns. It might also take sample-results shopping out of the equation -which I understand to have been a concern. As a patient consumer, I see testing as a public health issue, and I would be happy to pay a reasonable surcharge to assure that my product has been tested in a scientific, unbiased manner. While I only briefly looked at the numbers that Ms. Hoffman provided, a quick minute with my calculator seemed to show that an increase in excise tax required to accomplish this would be minimal. Weed in 502 stores is already relatively cheap. We live in a world of $4.50 cups of coffee. If consumers understand what the money is for, I think they will understand and value it. A surcharge of the size required may not even be noticeable by many consumers. According to my surveys and conversations with patients, the lack of QA is a primary reason why well-qualified patients are staying out of the 502 market. While agriculture of any type can always be a tough racket, 502 farmers often lament their low margins. This idea would take the cost of testing off their backs and put it on the consumer -which, as a consumer, I am OK with, if my initial back-of-the-envelope calculations place the extra consumer cost anywhere near the right neighborhood. Moreover, nearly every licensee I have spoken with, and every industry and patient group I have spoken with, like the idea. How often does that happen? The few objections I have heard seem to carry a suggestion that mandatory testing isn't necessary -which is a contention that I reject. I understand that we are pretty late in the rulemaking process, and this idea would require legislative changes, but it would be a shame if we adopted a system that was less than what Washington State deserved, simply because it was more convenient, or because of regulatory inertia. I bring up this idea late, because, like many other qualified patients, I have more or less dropped out of the 502 system. And the many recent calls from licensees who reached out to me have put the subject back on my plate. I would be willing to do more work on this idea.
Sherman Hom		As industry leaders in cannabis and pathogen genomics, we have spent decades working with quantitative polymerase chain reaction (qPCR) and culture-based methods for the detection of microorganisms. We are experts in the field with over 40 patents related to PCR and DNA sequencing based methods for detecting microorganisms. Kevin McKernan, Chief Scientific Officer at Medicinal Genomics Corporation (MGC) managed the Research and Development team for the Human Genome Project at the Whitehead Institute of MIT. He has over 45,356 citations related to his work in this field. Our scientists recommend the microbial testing specifications that will ensure that cannabis manufactured products are safe for patients and consumers. Due to our concerns for public health, we feel that the WA Cannabis Science Task Force Steering Committee Microbial Workgroup should consider modifying your present required microbial testing of cannabis to reflect ongoing efforts at the AOAC, USP, CDC, and FDA, which are consistent with our findings at MGC. The presence of microorganisms is common in natural products, such as cannabis flowers. One must be able to differentiate between harmless microbes ubiquitous in nature and those that are human pathogens that have contaminated the cannabis plant and/or manufactured products. Examples of human pathogens that have been detected in cannabis are Shiga toxin producing E. coli (STEC), Salmonella species, Aspergillus flavus, A. fumigatus, A. niger, and A. terreus. Current required tests for microbial contamination in states that have medical and/or adult-use cannabis programs vary among the states. Many states require a combination of some of the following tests: total

		bile-tolerant Gram-negative bacteria count (BTGN), total aerobic microbial count (TAMC), total yeast and mold count (TYM), total coliform count, and total E. coli count, STEC, Salmonella spp., and the 4 species of Aspergillus (see above) with various action levels for each test and each cannabis product type. All microbial tests have action levels as colony forming units (cfu/g), which is the number of colonies that grow on the surface of an agar medium plate. On the other hand, other states, such as California, only require species specific tests for STEC, Salmonella spp., Aspergillus fumigatus, A. flavus, A. niger, and A. terreus with an action level of zero (0) cfu/g of inhalable product and STEC & Salmonella spp. with an action level of zero (0) cfu/g of non-inhalable product. The Washington Liquor and Cannabis Board's conceptual draft rules designed for discussion regarding cannabis quality control testing (dated 10/1/21) indicated the following: (d) Microbiological screening. The sample and the related population fails quality control testing for microbiological screening if the results exceed the following limits: Unprocessed Plant Material Colony Forming Unit per Gram (CFU/g) 100 Cummings Center • Suite 406L • Beverly, MA 01915 • 877-395-7608 • www.medicinalgenomics.com 1 Bile Tolerant Gram Negative (BTGN) 1.0 * 104 Shiga toxin-producing Escherichia coli (STEC) <1 Salmonella spp. <1 Processed Plant Material Colony Forming Unit per Gram (CFU/g) Bile Tolerant Gram Negative (BTGN) 1.0 * 103 Shiga toxin-producing Escherichia coli (STEC) <1 Salmonella spp. <1 Our primary point is that total microbial count tests ("indicator tests"), such as BTGN bacteria do not test directly for the presence of species specific human pathogens. The American Herbal Pharmacopoeia's Cannabis Inflorescence Cannabis spp. monograph [1] states that total microbial count tests with their corresponding action levels must never be used to pass or fail a cannabis sample. The total count result does not provide any information on the presence of any pathogenic microorganisms in the cannabis sample, which may cause harm to patients and consumers. Therefore, Medicinal Genomics recommends that the WA Cannabis Science Task Force Steering Committee Microbial Workgroup consider modifying the required microbial testing rules to include required microbial testing for medical and adult-use cannabis and cannabis products to include the pathogen specific tests. These six tests are: 1. Salmonella species 2. Shiga-toxin producing Escherichia coli (STEC) 3. Aspergillus flavus 4. Aspergillus fumigatus 5. Aspergillus niger 6. Aspergillus terreus Since many medical cannabis patients are ill; especially those that are immunocompromised, the action levels for all six tests should be "None detected/gram" for inhalable products and only numbers 1 and 2 above for non-inhalable products. Twelve (12) states (AK, AZ, CA, CO, FL, HI, IA, MI, MO, OK, NV, and SD) have either required the tests to detect the human pathogens listed above or have drafted regulations to add or replace Total Count tests with the tests to detect pathogens. Medicinal Genomics also recommends that the the required microbial testing for medical and adult-use cannabis and cannabis products rules should include a statement concerning allowable methods to read: 1. A validated method using guidelines for food and environmental testing put forth by the USP, FDA, and AOAC Appendix J and cannabis as a sample type; or 2. (i) Another approved AOAC, FDA, or USP validated method using cannabis as a sample type."

		100 Cummings Center • Suite 406L • Beverly, MA 01915 • 877-395-7608 • www.medicinalgenomics.com 2 NOTE: "Another approved AOAC, FDA, or USP validated method using cannabis as a sample type" may include molecular methods, such as qPCR." The reasons for this recommendation are outlined below. Currently there are limited AOAC, FDA, or USP approved species specific pathogen testing methods for cannabis. Medicinal Genomics released the first version of our SenSATIVAx® (DNA extraction) and PathoSEEK® (qPCR assay) Manufacturer Validation Document in 2017. These method validations use cannabis as the sample type. At that time, there were no official guidelines published by any regulatory body describing how to validate a method for detecting microbes in the presence of a cannabis matrix. Due to this lack of available guidelines in the cannabis industry, our scientific team referenced guidelines for food and environmental testing put forth by the USP, FDA, and AOAC Appendix J. We continually add data to this document as we release new assays or make improvements to current assays. We are currently on version 31 of this document[2]. In addition, MGC's methods are currently going through additional validation according to AOAC's Standard Method Performance Requirements (SMPRs). AOAC has released 3 SMPRs for species specific testing for the species specific pathogens listed above (see #1-3 below). 1. Detection of Aspergillus in Cannabis and Cannabis Products https://www.aoac.org/wp-content/uploads/2019/10/SMPR-2019_001.pdf 2. Detection of Salmonella species in Cannabis and Cannabis Products https://www.aoac.org/wp-content/uploads/2020/07/SMPR-2020_002.pdf 3. Detection of Shiga toxin-producing Escherihia coli in Cannabis and Cannabis Products https://www.aoac.org/wp-content/uploads/2021/02/SMPR-2020_012.pdf Medicinal Genomics is a member of AOAC's Cannabis Analytical Science Program (CASP) Microbial Contaminants Working Group. The goal and objectives of this working group are to ● Develop Standard Method Performance Requirements (SMPR) for cannabis and hemp ● Extend a Call for Methods for each of the completed SMPRs ● Empanel an Expert Review Panel to review candidate methods ● Deliver consensus-based validated Performance Test Methods (PTMs) & Final Action Official Methods for the cannabis industry NOTE: Medicinal Genomics has a single AOAC Certified qPCR PTM for the detection of the 4 Aspergillus species, which was approved on August 10, 2021 and will have a single AOAC Certified qPCR PTM for the detection of Salmonella spp. & STEC by November 2021. The sample types for the Asp test are flower & infused products and will expand to include oils/concentrates & hemp by end of 2021. Moreover, the sample types for the Sal/STEC test will be flowers, oils, chocolates, and hemp. The primary advantage of using qPCR detection assays are that they are designed to identify unique specific DNA sequences either shared by an entire "group" of bacteria, such as all Salmonella species or a specific genus and species, such as STEC or the 4 different pathogenic Aspergillus species. If the unique sequences are present, then the qPCR test will detect it. Therefore, a qPCR test is very specific, very sensitive, and possesses a rapid turnaround time (6 hours) vs. plating methods that are less specific, less sensitive, and has a very slow turnaround time of days for colonies to form on a plate. Moreover, MGC 100 Cummings Center • Suite 406L • Beverly, MA 01915 • 877-395-7608 • www.medicinalgenomics.com 3 has developed a method to remove the DNA from dead cells by using a DNA nuclease, incubation, and nuclease inactivation step before amplification to detect any DNA from live pathogens. [3] Furthermore, there are additional major disadvantages of using plating methods to detect species specific bacterial and fungal pathogens. ● The cannabinoids, which represent 10-20% of the cannabis flower by weight, have been shown

		to have antibiotic activity. Antibiotics inhibit the growth of bacteria in plating methods. Salmonella and STEC bacteria are very sensitive to antibiotics, which may lead to a false negative result. ● Plating methods cannot detect endophytes, which are fungi that live a part or all of their life cycle inside a plant. Examples of endophytes are the species specific Aspergillus pathogens and Fusarium. Methods to break open the plant cells to access these fungal endophytes for plating methods also lyses these fungal cells (killing these cells in the process). Therefore, these fungal endophytes will not be able to form colonies in a plating method. ● Selective media for fungal plating methods, such as Dichloran Rose-Bengal Chloramphenicol (DRBC) reduces fungal growth; especially Aspergillus by 5-fold. This may lead to a false negative result for this pathogen. In other words, although DRBC medium is typically used to reduce bacteria; it comes at the cost of missing 5 fold more yeast and molds than Potato Dextrose Agar (PDA) + Chloramphenicol or molecular methods. Please see study results from the AOAC emergency response validation. [4] Respectfully, Sherman Hom Director of Regulatory Affairs Medicinal Genomics 100 Cummings Center • Suite 406L • Beverly, MA 01915 • 877-395-7608 • www.medicinalgenomics.com 4 References 1. American Herbal Pharmacopoeia's Cannabis Inflorescence Cannabis spp. Monograph https://herbal-ahp.org/online-ordering-cannabis-inflorescence-qc-monograph/ 2. MGC Validation Document https://1280717.app.netsuite.com/core/media/media.nl?id=5910362&c=1280717&h=6e4d1cce15d1eae41733&_xt=.pdf&fcts=20191014094610&whence= 3. Solving qPCR's Live-Dead Problem https://www.medicinalgenomics.com/solving-the-live-dead-problem/ 4. Whole genome sequencing of colonies derived from cannabis flowers & the impact of media selection on benchmarking total yeast & mold detection tools: https://f1000research.com/articles/10-624 100 Cummings Center • Suite 406L • Beverly, MA 01915 • 877-395-7608 • www.medicinalgenomics.com 5
J. Burns, PhD		Please find comments concerning Conceptual Draft Rules Designed for Discussion Regarding Cannabis Quality Control Testing 10/01/2021. Quality control sampling Sample deduction is not a term commonly used as a synonym for sample collection. In the context of WAC 314-55, this would most likely be assumed to refer to the accounting deduction of sample weight from a lot in Traceability. Should use the term "sample collected". Removal of section (3) (a) regarding sampling protocols will undermine the integrity of the QAQC tests. Without proper sampling protocols, it is impossible to know if the sample tested is representative of the lot/final product. The safety and protection of the consumer is impossible. The lack of a clearly defined scientific random sampling becomes more of a concern with the potential for increased sample size. Sample should be described in more detail. "Not less than 1 gram" could imply a flower bud of 1 gram must be picked as opposed to 1 gram in total that could be made of smaller flower buds. How will a lab know the test lot size to determine if proper sample amount was collected?

		Additional sampling protocols should be applied to lots over 20lbs. For example, requiring 2 potency and microbiological tests to be sure to capture the variability in the larger lots. This sampling should also increase incrementally, similar to the increase in sample size. Are flower lot samples allowed to be ground prior to submission? This would be a mechanism to hide adulteration. How will a lab know if entire lot was ground? Labs "must" fail or reject sample should remain "may". It is impossible for labs to determine, with certainty, if samples collected are representative of the lots or identify all adulterations. If this burden is placed on the labs, clear and concise guidelines for adulterations (identification, types, protocols) need to be defined by the LCB. 5373 Guide Meridian, Suite F-101 Bellingham, WA 98226 Labs are not enforcement. They are a third party that provides required data and information to the LCB and the licensee for consumer protection and safety. LCB sets the standards and determines which products can and cannot be sold. Labs do not fail samples. In the case of failing a sample for a bad QA sample, or containing a prohibited compound not explicitly listed in WAC 314-55, what is the mechanism that labs would use to "fail" a sample? How would the labs inform the LCB of the failed test? Labs should be allowed to reference samples for any test, not limited to the ones currently listed. Best practices in science utilize the ability to collaborate on difficult or unusual samples to ensure accuracy and develop new methods. Microbiology STEC needs to be clearly defined. Does this only include E. coli O157:H7? Foreign Matter The addition of one insect fragment, one hair or 1 mammalian excreta may be too small. Does this match with standards in other industries? Will these amounts increase if lot sizes increase? Is one hair referring to human hair only, or does it include fur and fibers? The presence of visible mold should be added to this list. Retest/remediation A clear definition of allowable retests should be included. What areas of testing can request retest? What is the range of failures that are allowed to be retested? Methods and protocols for remediation should be clearly defined. Edibles WAC 314-55 should define allowable error range on edibles. For example, 10 mg/g +/- 1mg/g. Proficiency Tests Proficiency Tests should be reduced in frequency. For example, after passing 2 consecutive rounds for a parameter, the parameter PT is only required once per year as long as a passing PT is achieved. 5373 Guide Meridian, Suite F-101 Bellingham, WA 98226 It is not possible for labs to meet the requirement of "manage, analyze and report all PT samples in the same manner as customer samples" until PT are available in cannabis matrix.

Attachment A
Public Comment Table
Topic: Conceptual Draft Rules for Cannabis Quality Control Testing