WAC 314-55-102 Quality assurance and quality control. (1) **Certified laboratory 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. Cannabis licensees must use a laboratory certified by the board (certified laboratory) to conduct quality control testing required under this chapter. Prior to becoming certified, laboratories must be accredited by the WSDA as specified in chapter 16-309 WAC.

(a) Licensees must use certified laboratories to conduct testing on cannabis and cannabis products in the following required fields of testing:

(i) Water activity;

(ii) Cannabinoid concentration 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 product 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 certified 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) **Cannabinoid concentration analysis.**

(i) A cannabinoid concentration analysis is required to determine the concentration of cannabinoid compounds present in cannabis and cannabis products. The results of the cannabinoid concentration analysis must be reported to the board in the state's traceability system in the required format. The cannabinoid concentration analysis must include testing for at least the following cannabinoids:

(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) Any THC compound that is labeled, advertised, or marketed as part of the product;

(C) Total delta-9 THC;

(D) Total THC for tetrahydrocannabinol compounds other than delta-9 THC;

(E) Total CBD.

(ii) Calculating total THC and total CBD.

(A) Total delta-9 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 THC for tetrahydrocannabinol compounds other than delta-9 that are present in an amount greater than 0.2 mg/g must be calculated as follows, where M is the mass or mass fraction of the neutral (THC) or acidic form (THCA) of the tetrahydrocannabinol compound: M total THC = M THC + [(molar mass of THC/molar mass of THCA) × M THCA].

(C) 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 cannabis;

(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

Solvent	µg/g	ppm (simplified)	CAS #
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
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 cannabis 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 cannabis products described below. Licensees and certified labs may opt to perform additional quality control tests on the same sample.

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

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

(b) If cannabis 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) Cannabis 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
Cannabis mix	1. Water activity testing 2. Cannabinoid concentration 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. Cannabinoid concentration analysis 2. Mycotoxin screening 3. Residual solvent test 4. Pesticide screening
Concentrate or extract made with a CO_2 extractor like hash oil	1. Cannabinoid concentration analysis 2. Mycotoxin screening 3. Residual solvent test 4. Pesticide screening
Concentrate or extract made with ethanol	1. Cannabinoid concentration analysis 2. Mycotoxin screening 3. Residual solvent test 4. Pesticide screening
Concentrate or extract made with approved food grade solvent	1. Cannabinoid concentration 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. Cannabinoid concentration analysis 2. Microbiological screening 3. Mycotoxin screening 4. Pesticide screening
Infused cooking oil or fat in solid form	1. Cannabinoid concentration analysis 2. Microbiological screening 3. Mycotoxin screening 4. Pesticide screening

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

End Product Type	Tests Required
Infused solid edible	1. Cannabinoid concentration analysis 2. Water activity testing

End Product Type	Tests Required
Infused liquid (like a soda or tonic)	1. Cannabinoid concentration analysis
Infused topical	1. Cannabinoid concentration analysis
Cannabis mix packaged (loose or rolled)	1. Cannabinoid concentration analysis
Cannabis mix infused (loose or rolled)	1. Cannabinoid concentration analysis
Concentrate or cannabis-infused product for inhalation	1. Cannabinoid concentration analysis

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

(5) Useable flower, a batch of cannabis concentrate, or a batch of cannabis-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 cannabis flower and other material that will be extracted, and cannabis 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 cannabis 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 cannabis 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 cannabis 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 cannabis 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 cannabis flower, lots, or batches so long as the remediation method does not impart any toxic or harmful substance to the useable cannabis, cannabis concentrates, or cannabis-infused product. Remediation solvents or methods used on the cannabis product must be disclosed to:

(A) A licensed processor;

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

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

(D) The consumer upon request.

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

(iii) No remediated quantity of cannabis 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 cannabis 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 cannabis will not supersede the original compliance testing certificate of analysis.

(7) **Referencing.** Certified laboratories may reference samples for mycotoxins, heavy metals, and pesticides testing to other certified labs by subcontracting for those fields of testing. Laboratories 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 laboratories are not limited in the amount of useable cannabis and cannabis products they may have on their premises at any given time, but a certified laboratory must have records proving all cannabis and cannabis-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 laboratory for any cannabis 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 cannabis or cannabis 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.

(11) All cannabis products produced, processed, distributed, or sold after the effective date of these rules, must comply with these rules and this chapter; however, postharvest products in the possession of or being processed by a licensee that do not comply with these rules as of their effective date may be sold, distributed, or both within a reasonable period of time, determined by the board.

[Statutory Authority: RCW 69.50.342 and 69.50.345. WSR 24-21-051, s 314-55-102, filed 10/9/24, effective 1/7/25. Statutory Authority: RCW 69.50.342 and 2022 c 16 § 168. WSR 22-14-111, § 314-55-102, filed 7/6/22, effective 8/6/22. Statutory Authority: RCW 69.50.345 and 69.50.348. WSR 22-06-097, § 314-55-102, filed 3/2/22, effective 4/2/22. Statutory Authority: RCW 69.50.342 and 69.50.345. WSR 17-12-032, § 314-55-102, filed 5/31/17, effective 8/31/17; WSR 16-11-110, § 314-55-102, filed 5/18/16, effective 6/18/16; WSR 15-11-107, § 314-55-102, filed 5/20/15, effective 6/20/15; WSR 14-07-116, § 314-55-102, filed 3/19/14, effective 4/19/14. Statutory Authority: RCW 69.50.325, 69.50.331, 69.50.342, 69.50.345. WSR 13-21-104, § 314-55-102, filed 10/21/13, effective 11/21/13.]

Reviser's note: The brackets and enclosed material in the text of the above section occurred in the copy filed by the agency.