



MEMORANDUM

TO: Marijuana Control Board DATE: July 10, 2019

FROM: Erika McConnell, Director RE: Regulations Project – Testing Oversight

This regulations project contains proposed changes to improve the oversight of testing facilities. At the August 2018 meeting, the board approved a number of legislative requests, including a request for the oversight of testing facility operations to be shifted to the Department of Environmental Conservation. In subsequent months, the interest in that proposal has waned. However, DEC staff and AMCO staff have worked very collaboratively to try to achieve the same goals through changes to the board's regulations at 3 AAC 306.

The attached proposed regulations changes strengthen the role of the board's contractor by:

- requiring the contractor to review testing facility applications and provide a report on the application to the board;
- adopting by reference a testing facility compliance manual (attached) drafted by Steve Crupi of DEC's Environmental Health Lab; and
- requiring any changes to a testing facility's standard operating procedures to be approved by the board's contractor (or the board).

In addition, the requirement for a marijuana testing facility to pay all costs of random validation is removed, but the renewal fee for a testing facility license is proposed to be increased.

These changes support the proposal to have the board contract with DEC to fulfill the role of the board's contractor as referenced in 3 AAC 306 Article 6.

This regulations proposal has not been reviewed by the Testing Working Group, but the group has reviewed the proposed compliance manual.

The public comment period for this project closed on June 19, 2019. Ten comments were received, which are attached.

Options for the board:

- Vote to adopt as written
- Amend; if amendment is significant, put out for public comment
- Send back to staff for revisions
- Close the project without action



3 AAC 306.100(d) is amended to read:

(d) The annual license or endorsement fee, to be paid with each application for a new marijuana establishment facility license or endorsement and each license or endorsement renewal application is

(1) for a new retail marijuana store license, \$5,000, and for a renewed retail marijuana store license, \$7,000;

(2) for a new limited marijuana cultivation facility license, \$1,000, and for a renewed limited marijuana cultivation facility license, \$1,400;

(3) for a new standard marijuana cultivation facility license, \$5,000, and for a renewed standard marijuana cultivation facility license, \$7,000;

(4) for a new marijuana concentrate manufacturing facility license, \$1,000, and for a renewed marijuana concentrate manufacturing facility license, \$2,000;

(5) for a new marijuana product manufacturing facility license, \$5,000, and for a renewed marijuana product manufacturing facility license, \$7,000;

(6) for a new marijuana testing facility license, \$1,000, and for a renewed marijuana testing facility license, ~~\$5,000~~[\$2,000];

(7) for an onsite consumption endorsement to a retail marijuana store license, \$2,000. (Eff. 2/21/2016, Register 217; am 7/19/2017, Register 223; am 8/11/2018, Register 227; am 2/21/2019, Register 229; am ____/____/____, Register ____)

- Authority:** AS 17.38.010 AS 17.38.150 AS 17.38.200
AS 17.38.070 AS 17.38.190 AS 17.38.900
AS 17.38.121

3 AAC 306.620(c) is amended to read:

(c) The board will approve a marijuana testing facility license if, after the board or the board's contractor has examined the qualifications and procedures of the marijuana testing facility license applicant **and documented the conclusions of the examination in a written report**, the board finds them generally in compliance with good laboratory practices **and their application meets the requirements of this section**. Nothing in AS 17.38 or this chapter constitutes a board guarantee that a licensed marijuana testing facility can or will protect the public from all potential hazards of marijuana including microbials, poisons or toxins, residual solvents, pesticides, or other contaminants. (Eff. 2/21/2016, Register 217; am_____/_____/_____, Register____)

- Authority:** AS 17.38.010 AS 17.38.150 AS 17.38.200
- AS 17.38.070 AS 17.38.190 AS 17.38.900
- AS 17.38.121

3 AAC 306.635(a) is amended to read:

(a) An applicant for a marijuana testing facility license and a licensed marijuana testing facility shall

(1) use as guidelines or references for testing methodologies

(A) the American Herbal Pharmacopoeia's Cannabis Inflorescence:

Standards of Identity, Analysis, and Quality Control, Revision 2014, adopted by reference; and

(B) the United Nations Office on Drugs and Crime's Recommended

Methods for the Identification and Analysis of Cannabis and Cannabis Products: Manual

for Use by National Drug Analysis Laboratories, dated 2009 and adopted by reference;
and

(2) notify the board of any alternative scientifically valid testing methodology the marijuana testing facility proposes to use for any laboratory test it conducts; the board may require third-party validation of any monograph, peer-reviewed scientific journal article, or analytical method the marijuana testing facility proposes to follow to ensure the methodology produces comparable and accurate results; **and**

(3) comply with the Marijuana Testing Facility Compliance Document, dated 2019 and adopted by reference; a marijuana testing facility whose license was first issued prior to [effective date] shall comply with this subsection by [effective date + six months].

3 AAC 306.635(c) is amended to read:

(c) The board or the board's contractor may inspect the practices, procedures, and programs adopted, followed, and maintained by the applicant or the licensed marijuana testing facility and may examine all records of the applicant or the licensed marijuana testing facility that are related to the inspection. The board may require an applicant or a licensed marijuana testing facility to have an independent third party inspect and monitor laboratory operations to assess testing competency and the marijuana testing facility's compliance with its quality program. The board may require random validation of a marijuana testing facility's execution of each testing methodology the facility uses. [THE MARIJUANA TESTING FACILITY SHALL PAY ALL COSTS OF VALIDATION.] (Eff. 2/21/2016, Register 217; am __/__/____ Register ____)

Authority: AS 17.38.010 AS 17.38.150 AS 17.38.200

AS 17.38.070

AS 17.38.190

AS 17.38.900

AS 17.38.121

3 AAC 306.640(b) is amended to read:

(b) The scientific director of a marijuana testing facility shall approve, sign, and date each standard operating procedure, and each revision to any standard operating procedure. **Each revision to any standard operating procedure shall be provided to the board within 10 days of approval by the scientific director for review by the board or the board’s contractor. The revised standard operating procedure shall not be implemented until approved by the board or the board’s contractor.** (Eff. 2/21/2016, Register 217; am __/__/____, Register __)

Authority:

AS 17.38.010

AS 17.38.150

AS 17.38.200

AS 17.38.070

AS 17.38.190

AS 17.38.900

AS 17.38.121

MARIJUANA TESTING FACILITY COMPLIANCE DOCUMENT

Prepared for:

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Prepared by:

AMCO Technical Working Group

March 20, 2019

Introduction

Purpose and Scope

The purpose of this document is to establish a guideline for laboratories performing cannabis industry-related testing. Matrices may include, but are not limited to cannabis plant material, concentrates, consumables,

Definitions

Accuracy – a combination of random and systematic error that assesses the difference between a result and a “true” value.

Analyte – a chemical compound or organism of interest.

Analyte group – a collection of chemical compounds or organisms consisting of similar characteristics.

Analytical balance – a type of balance capable of measuring sub-milligram quantities, typically 0.1 mg or better.

Analytical staff – employees with demonstrated competency to routinely prepare samples for testing and/or perform the testing.

Aqueous – a solution in which the base solvent is water.

Audit – a systematic and independent examination.

Batch – a group of samples governed by the same quality control measures and subjected to the same protocols at the same time.

Bias – a tendency towards or away from an expected outcome.

Blank – a material or container absent of a material, analyte, or organism of interest.

Calibration (CB) – the base solvent or reagent used to subject a sample to analysis that is free of the analyte of interest.

Method (MB) – a material free of the analyte of interest.

Temperature (TB) – a media utilized to determine a representative temperature for the entire space of a temperature controlled unit (e.g. sample shipment cooler, refrigerator, oven).

Calibration –

Initial calibration (ICAL) – reference material prepared at incremental concentrations to assess the range within which an instrument can predictively quantitate an analyte of interest.

Continuing calibration verification (CCV) – reference material prepared at a known concentration to determine if instrument performance is at the same level as assessed at the time of the ICAL.

Calibration Range – the concentration range within which an instrument can predictively quantitate an analyte of interest, defined by the lowest and highest possible concentrations. Ideally, it is the range of linear instrument response vs. target analyte concentration.

Chain of custody (COC) – trail of information that documents the sequence of custody, person or storage control, transfer, and final disposition of sample, hardcopy, or electronic evidence.

Comparability – demonstration of a procedure or set of procedures to generate a similar result upon changing a matrix, quality control materials, or quality control operating parameters.

Completeness – a measure of the extent that sample and quality controls meet data quality objectives (e.g. sensitivity requirements, quality control results within acceptance limits)

Control Material - {compare to reference material}

Correlation coefficient (CC) – a measure of the linear relationship between two or more data points differentiated by each point’s concentration.

Corrective action – a change in policy or procedure intended to prevent a nonconformance, anomaly, or unwanted trend from recurring.

Deficiency – lacking something or to describe a situation or material containing less than the desired amount of a particular defining characteristic.

Document – contains or relays information that does not change until there is a change in policy, procedure, or related external reference material or used to record data.

Duplicate, sample – a second portion of a sample, subsampled in the same manner as the original sample and subjected to the same procedures as the original sample and in the same batch as the original sample.

Form – A document created by the lab to record visual observations or data. Each form must minimally contain the laboratory name, unique form ID, revision date of the form template, a title indicating the activity being documented, and initials and date of staff recording information.

Internal standard (IS) – a compound chemically similar to an analyte or analyte of interest, used to independently assess the effectiveness of an analytical procedure on an individual sample, control, or reference material basis and also used to quantitate an analyte of interest.

Laboratory control sample (LCS) – a known amount of analyte of interest or chemically similar analyte in addition to the surrogate, added to a blank matrix (i.e. a matrix that does not contain the analyte of interest but is similar in phase (i.e. aqueous, solid, organic (e.g. oil for concentrates or oregano for plants)) to test the effectiveness of a method to test for the analyte in that phase.

Matrix – the main material; the non-analyte components of a material

Matrix spike (MS) – a known amount of analyte of interest or chemically similar analyte in addition to the surrogate, added to an aliquot of a sample to test the effectiveness of a method to test for the analyte in that sample's matrix.

Measurement uncertainty (MU) – an indication of incomplete information of a quantitative value, indicating to what degree the value may be biased on both the low and high end.

Method detection limit (MDL) – the lowest quantity or concentration at which a substance or analyte can be identified with 99% confidence under a given set of conditions.

Method reporting limit (MRL) – the lowest quantity or concentration at which a substance or analyte can be quantitated with 99% confidence under a given set of conditions.

Method validation – demonstrating the effectiveness of implementing a new method, a method new to a lab, or a significant change to an existing method

Method verification – demonstrating the effectiveness of an existing method's ability to manage a new variable, e.g. new matrix, new location of testing, change in reagents, change in prep or testing conditions.

NIST – National Institute of Standards and Technology

Nonconformance – a defect or occurrence that deviates from procedure or falls outside of acceptable limits

PARRCCS – precision, accuracy, representativeness, reproducibility, comparability, completeness, sensitivity

Precision – {Mean % Difference, CV/RPD,} - assess repeatability of a procedure given the same conditions, materials, and steps for each attempt. Common statistical measurements include mean percent difference, relative percent difference (RPD) and coefficient of variation (CV).

Primary source – a vendor that supplies reference material for instrument calibration or as the primary reference for initially identifying and/or quantifying an analyte of interest.

Quality assurance (QA) – the outline of quality policies and expectations that govern overall how and why a business operates.

Quality control (QC) – daily quality procedures or activities that are implementing a QA program.

Quality manual (QM) – the document that outline quality policies and expectations that govern a business.

Raw data – original numbers collected by an instrument or original observations recorded by a technician.

Record – input or output containing data, observations, or actual operating parameters.

Representativeness – demonstration of thoroughness that a particular procedure or set of procedures is characterizing a sample matrix through identification and quantitation of analytes of interest. Typically an intra-laboratory measure.

Reproducibility – demonstration of a procedure or set of procedures to generate the same result when employed at different labs or if implementation of a procedure change is able to achieve the same result.

Secondary source material – a vendor that supplies reference material from a different lot than the associated primary source that is used to confirm the identity and/or quantitation of an analyte of interest determined by comparison to the primary source.

Sensitivity – the lowest quantity of an analyte of interest that can be observed in a sample, evaluated as part of a method validation for the ability to meet the desired data quality standards.

Subcontract – requesting service from an entity operated as a separate business unit.

Surrogate – a compound chemically similar to an analyte or analyte of interest, used to independently assess the effectiveness of the extraction and analytical procedures on an individual sample, control, or reference material basis.

Program Administration

Sample Receiving/Login/Storage

A Sample Receiving SOP is required, detailing instructions and requirements for documenting the receipt of samples, such as:

- number of samples received
- the matrix or matrices received
- relinquishing and receiving signatures demonstrating custody transfer
- dates and times of sample collection
- courier delivering the samples (e.g. hand carried, commercial courier)
- verification of sample condition
- sufficient volume received for requested tests
- sample properly preserved and packaged for the tests requested
- documentation of client requested tests
- instructions for receiving samples in METRC
- instructions for reconciling weight discrepancies between METRC and throughout the pre-testing, testing, and post-testing phases of the sample.
- instructions that follow METRC requirements for transferring samples from one lab to another lab.

The SOP must explain how the laboratory tracks and manages samples from receipt, to analysis, to reporting, to storage, to disposal. The detail shall include how samples are uniquely numbered, the internal sample labeling procedures, protocols for reviewing for clerical errors, and sample login data entry errors.

Acceptance/rejection criteria are required in the SOP, including (as applicable):

- identification of who can reject samples
- administrative errors that can result in rejection
- rejection based on weight deficiencies or discrepancies
- rejection based on observations at receiving (e.g. leaking container, obvious contamination)
- procedure for handling rejected samples.

An SOP outlining sample storage procedures is also required, discussing requirements for storing samples upon receipt, during the testing process, and long term storage. Details to include are:

- temperature of storage
- dates of storage, removal of storage, return to storage
- comments (e.g. reason for removing sample)
- the security of the samples and related hardcopy and digital records documenting custody
- initials of the recorder

Subcontracting (*involve testing for which a laboratory does not either have the capability or the capacity. Can cover intra-state subcontracting, but inter-state subcontracting will not be covered until regulation change allowing for it, especially as pertains to legal shipping.*) Receiving lab must have AK cannabis license (*will apply to both intra-state and inter-state subcontracting. We currently don't know enough about any one State program to invoke reciprocity. Not sure comfortable using ISO17025 accreditation for reciprocity since can be variations based on State-specific requirements*). Chain of custody. If incorporate sub lab result, identify the sub lab on the report for that result and provide custody transfer documentation.

By definition, a subcontract lab is another business unit, whether its own discrete company or a separate business unit (different physical location) of the same company. A customer service center location is not a subcontractor.

Training

The laboratory must document responsibilities, training, and competency for all staff via curriculum vitae (CV), resumes, training records, competency assessment (internal and/or external), and professional certifications. The documentation must identify the analyses and procedures each individual is authorized to independently perform and which require supervision. The criteria for which a person must demonstrate competency for the task or method must be documented.

Record keeping

Visual observations of sample testing that either factors into the final result or the final result must be recorded.

Raw data, including manual integrations (chromatograms representing before and after the manual integration must be available, initialed and dated by person making the change(s)), including original observations and calculations recorded at the time they are made, have been correctly interpreted and performed

A data reviewer/auditor must be able to recreate the testing environment with which the results were analyzed/determined. Observations that do not directly factor into the final result, but support test results, confirm integrity of sample, standard, and reagent storage conditions, must also be recorded. Examples include but are not restricted to:

- incubation times and temperatures,
- analysis dates and times
- identification of analysts performing the testing and which steps were completed by each person
- instrument IDs, instrument settings and calibrations (see Laboratory Facilities and Equipment section)
- manufacturer and lot numbers of reagents and materials used
- results of control samples (see Quality Control sections below)
- results of quality control checks performed on media and reagents

Laboratory facilities and equipment – environmental controls, separation of office activities from laboratory

The laboratory must outline protocols in an SOP or throughout SOPs (as applicable) regarding general housekeeping, including glassware cleaning, to avoid the impact of poor housekeeping on the quality of results.

Instrument maintenance logs are required for documenting scheduled (e.g. daily, weekly) and unscheduled maintenance and repair events. The logs are an important tool for troubleshooting and ensuring that all maintenance and repair are in agreement with manufacturer specifications. After adjustments, the instrument must be verified fit for use by analyzing controls, calibration material, or blanks, as appropriate.

Temperature charts and logs are required for documenting adherence to requirements for temperature dependent equipment (e.g. refrigerators, freezers, incubators, water baths) and tests. The frequency of measurements is dependent on the intended use of the unit or the characteristic of the subject method. Units intended for sample preparation and analysis must minimally have start and stop temperatures recorded.

Incubation periods that are more than a day require starting temperature readings, a temperature reading each day of the incubation period, and an incubation period ending temperature, including the date and time of each reading, and documenting date and time of the start and stop of the full incubation period. The required temperature range must be stated on each log to assist in identifying outliers. Outliers must be acknowledged on the form, to include corrective action (e.g. temperature adjustment and follow-up reading) or reference to a corrective action document.

Quality Systems

General – This section covers QA, QC, method selection, sample handling, and documentation requirements for the laboratory. The laboratory must discuss these elements in their QM and SOPs (as applicable) and implement them in operations.

Quality manual (QM) –

- Defines the laboratory’s quality system. Policies and procedures guiding the laboratory are documented or referenced in the QM. Annual review and updates required.
- Identify key staff positions and the corresponding responsibilities.
- Describe how and the frequency in which the possibility of conflicts of interest are assessed and prevention measures in place to identify or avoid conflicts.
- A statement of commitment from management regarding ethics, code of conduct, and commitment to quality.
- Calibration requirements for support equipment, covering balances, thermometers (reference and working) (liquid, digital, dataloggers), weights (reference and working), pipettes, and fume hoods. Certificate documentation must be maintained, whether performed in-house or by an outside vendor. In-house service/calibrations required and the associated SOP, documented annual training of technicians, and demonstration of competency for the calibration and service.
- Procedures for calibration, verification, and maintenance of support equipment.
- Detail procedures for control, maintenance, and retention of records and documents.
- Documentation procedures, to include documentation procedures discussing error correction, completing forms digitally or on hardcopy, traceability, and record and evidence retention time requirements for hardcopy (sample, testing, and custody evidence related) (5 years required), and digital data acquisition (5 years required).
- Calculation and data reduction procedures for results. Recommend adopting EPA rules for rounding.
- Review and reporting procedures, indicating individual qualifications required to perform data review and reporting.
- Provide procedures for achieving and maintaining traceability of chemical, biological, and metrological standards, reagents, and reference materials used to support or derive any results or measurements.
- Sample receiving, control, storage, and disposal handling procedures.
- Corrective action procedures – Required:
 - When deviation or nonconformance from policies and procedures are identified.
 - When QC or PT sample results are outside of acceptance limits
 - Identify:
 - The reason for initiating the corrective action.
 - The individual ultimately responsible for action resolution occurring.
 - The date the problem was identified.
 - Source of the problem identified through root cause analysis.
 - Indicate if customer data is impacted.
 - Apply correction.
 - Have a mechanism to verify implementation of the correction and take additional action if initial corrective action implementation fails.
- Document corrective action process.

- Situations may occur where data, which do not meet all quality criteria, are accepted and reported to the client and METRC. Authority for making this decision, i.e. professional judgment, must be discussed in the QM, defining what laboratory positions have authorization for making the decision. Situations of professional judgment must be documented in the report's project narrative to include:
 - the nature of the outlier,
 - the QC limit or other criterion not met,
 - the parameter/analyte(s) impacted,
 - the impact on the data,
 - any conversation with the client and resulting outcome(s), and
 - the reason the data are reported, despite the exceedance.
- Demonstration of Capability (staff competence)
- Method selection, validation, and verification procedures
- Measurement traceability
- Measurement uncertainty procedure and frequency of review.

SOPs – Standard operating procedures (SOPs) provide detailed instructions to perform routine operations and practices implemented at the laboratory. These documents represent the procedural flow and give guidance on how to address reasonably anticipated expected and unexpected scenarios.

Procedures for calibration, verification, and maintenance of major analytical instruments. Procedures for incorporating and evaluating quality control samples, including, but not limited to instrument tuning and calibration standards, blanks, LCS samples, matrix fortified samples and duplicates. Specify QC sample frequency, acceptance criteria, and corrective action guidance for outliers. Either in one document or in several individual documents, discuss protocols for homogenizing samples prior to obtaining a representative sub-aliquot for testing and identifying instituted controls for not contaminating the source material in the process.

SOPs must be approved, signed and dated by the Laboratory Director prior to initial use and upon revision. Annual reviews and corresponding updates (if any) are required. SOP documents can be maintained as hardcopy or electronically. If the former, a controlled and documented distribution of documents must be maintained. Only the current versions can be accessible by staff.

Variances to SOPs must be pre-approved by the Laboratory Director or Quality Manager and documented.

Quality control requirements for chemistry – QC program to QC samples that assess background contamination (background or blank subtraction is not permitted), sensitivity, level of control, level of bias (results may not be adjusted as a result of QC recovery), reproducibility and selectivity. At least annually, laboratory shall evaluate QC program, including implementation of QC samples, applicability of acceptance criteria, trends, and document any updates.

- All new and revised methods must be validated prior to use, characterizing the PARRCCS parameters.
- Establish MDL and MRL for testing that results in the reporting of a numerical result.
- Documentation requirements for reagents, controls, and standards –
 - Reagent/Control/Standard containers must be labeled with identity of material.
 - Receipt date or preparation date, as applicable.
 - Expiration date.
 - Receiver's or preparer's initials.
 - If received, open date.
 - Storage conditions
 - Lot number and manufacturer or lab-assigned standard ID number

- Lot numbers or standard ID numbers must be documented for each preparation and analytical batch.
- Batching – A preparation or analysis batch consists of at most 20 samples of a similar matrix.
Examples:
 - Plant samples – Flower, trim, and kief samples can be in the same batch.
 - Concentrates – Concentrates can be in one batch, though the laboratory should consider placing samples with an aqueous based solvent (e.g. water) in one batch and samples with an organic based solvent (e.g. oil, butane, propane) in a separate batch.
 - Edibles – Segregating edibles into batches is determined by the base constituent of each matrix. For example, separate samples with a flour base from sugar based samples.
- For multi-parameter analyses, data acquisition conditions for each parameter must be the same as for all associated quality control samples or measures. The latter includes internal and surrogate standards.
- Method blanks (MB) – One MB is required per sample preparation batch of 20 client samples or less. If sample preparation is not a required step, then one MB is required per analytical batch. An MB consists of a matrix similar to the samples and is known to not contain the parameter of interest. For a batch of plant material, a matrix like oregano is an option. An MB is subjected to all of the same steps as a sample. The MB result must be less than the MRL. Samples associated with a failing MB must be re-prepared and reanalyzed with a new set of preparation QC.
- Instrument blanks (IB) – One IB is required at the start of each analytical batch. The IB consists of the same solvent make-up used to introduce samples onto the instrument. The IB result must be less than the MRL. Samples and preparation batch QC associated with a failing IB must be reanalyzed.
- Other Blanks – other blanks may be used by the laboratory depending on the type of method and concerns of the laboratory and/or client. Trip blanks are used to check for interferences encountered during sample collection and handling. Instrument Blanks may also be inserted between sample analyses to prevent instrument carryover.
- Surrogates – A compound chemically similar to the test parameter, used to determine method efficiency. The surrogate signal ideally must not interfere with that of the target analytes, or as little as possible. Surrogate addition is required for all organic testing (e.g. potency, terpenes). The surrogate is added to all samples, preparation batch QC samples (including, but not limited to MB, LCS, MS, and Duplicates), and analytical batch QC samples (including, but not limited to calibration standards, calibration check standards, QC or second source standards, MSA analyses, and IB). The surrogate is added to the samples at the beginning step of sample preparation and directly into the matrix. The surrogate is measured in the same way as the target analyte (i.e. same channel or wavelength). The laboratory shall establish performance based QC limits (PBQLs) based on historical data generated at the lab. If sufficient historical data are not available, the laboratory will use 80 – 120% as interim limits until which time sufficient data points are available to generate PBQLs. PBQLs shall represent a 99% confidence interval. Samples and QC samples with surrogate results not meeting the QC limits must be re-prepared and reanalyzed. Preparation batch QC samples with failing surrogate results necessitate the re-preparation of all samples and QC samples.
- LCS – One LCS is required per sample preparation batch of 20 client samples or less. An LCS is subjected to all of the same steps as a sample. The LCS is measured in the same way as the samples (i.e. same channel, wavelength, parent ion, etc.). The laboratory shall establish performance based QC limits (PBQLs) based on historical data generated at the lab. If sufficient historical data are not available, the laboratory will use 80 – 120% as interim limits until which time sufficient data points are available to generate PBQLs. PBQLs shall represent a 99% confidence interval. Samples with target parameter or surrogate results not meeting the QC limits must be re-prepared and reanalyzed. If a recovery failure occurs for a target analyte or surrogate, the entire preparation batch must be re-prepared and reanalyzed. An LCS duplicate (LCSD) can provide on-going method stability

- information, and decrease the number of batches needed to accumulate performance-based data.
- MS - One MS is required per sample preparation batch of 20 client samples or less. An MS is subjected to all of the same steps as a sample. The MS is measured in the same way as the samples (i.e. same channel, wavelength, parent ion, etc.). The laboratory shall establish performance based QC limits (PBQLs) based on historical data generated at the lab. If sufficient historical data are not available, the laboratory will use 80 – 120% as interim limits until which time sufficient data points are available to generate PBQLs. PBQLs shall represent a 99% confidence interval. Samples with surrogate results not meeting the QC limits must be re-prepared and reanalyzed. If a recovery failure occurs for a target analyte or surrogate and the recovery is greater than or equal to 50%, data can be accepted if all target analyte and surrogate results in the associated batch LCS are acceptable. If the MS recovery is less than 50%, the parent sample, MS, and associated duplicate must be re-prepared and reanalyzed.
 - Duplicate (sample duplicate or matrix spike duplicate) - One duplicate is required per sample preparation batch of 20 client samples or less. Given sufficient sample volume, it is best practice to use the parent sample for the duplicate sample as used for the MS sample. A duplicate sample is subjected to all of the same steps as a sample. The laboratory shall establish performance based QC limits (PBQLs) based on historical data generated at the lab. If sufficient historical data are not available, the laboratory will use an RPD of 20 as an interim limit until which time sufficient data points are available to generate PBQLs. PBQLs shall represent a 99% confidence interval. Samples with surrogate results not meeting the QC limits must be re-prepared and reanalyzed. If an RPD failure occurs for a target analyte and the recovery is less than or equal to 100, data can be accepted if all target analyte and surrogate recovery results in the associated batch LCS are acceptable. If the duplicate sample RPD recovery is greater than 100, the parent sample, duplicate, and associated MS sample must be re-prepared and reanalyzed.
 - QC or second source standard – A second source standard must be analyzed immediately after each multi-point initial calibration and before samples and QC samples can be analyzed. Results of this standard must be between 80 – 120% for target analytes and surrogates before sample and QC sample analysis can proceed. If the second source standard is accompanied by a vendor supplied certificate indicating PBQLs specific for the standard, those limits may be used instead.
 - Instrument calibration (ICAL) – The ICAL must consist of a minimum of three standards analyzed at varying concentrations with the lowest concentration standard at or greater than the MRL, but greater than zero (0). All standards analyzed to establish the ICAL must be analyzed within a 12-hour period. An acceptable ICAL will have a %RSD greater than or equal to 15%, a linear regression correlation coefficient greater than or equal to 0.995, or a coefficient of determination value greater than or equal to 0.99 for target analytes and surrogates before the second source standard, sample, and QC sample analyses may proceed. Ideally, the calibration is not forced through zero. An IB may be used as an additional calibration point, but it cannot replace one of the three known concentrations.
 - Continuing calibration verification (CCV) – A CCV standard, which is prepared from the same stock standard as the ICAL standards, must be analyzed at the start of the run, after every 10 injections, and at the end of the run. If an ICAL starts the analytical run, the CCV must be analyzed after the second source standard and before samples and QC samples are analyzed. The target analytes and surrogates in the CCV must have recoveries between 85 – 115%. Analyses of the sample and QC samples must be bracketed (before and after analysis) by compliant CCVs. Any samples or QC samples associated with a noncompliant CCV must be reanalyzed. Bracketing CCVs must be no longer than 12 hours apart.
 - Internal standards (IS) – ISs can be added to samples and preparation and analysis QC samples for quantitative and retention time (RT) shift monitoring purposes. If ISs are used, they must be added to all samples, blanks, and preparation and analysis QC samples. IS area and RT data are compared to the area(s) and RT(s) of the mid-level standard in the ICAL. The quality control limits for the area are from 50% to 200% percent of the IS area in the mid-level ICAL standard. The quality control limits for the RT are ± 0.50 minutes of the IS RT in the mid-level ICAL standard. If the IS area or

- RT does not fall within the QC limits, the sample or QC sample must be reanalyzed.
- Selectivity – for non-mass spec methods, have a procedure in place to confirm target analyte identity (e.g. dual column, dual detector, dual wavelength, RT windows)
 - Peer review – Data review procedures must be sufficient to assess the accuracy, precision, and other performance measures are attained and the tests performed as required to ensure accurate and reliable results are reported. Timing and number of reviewers should be assessed periodically for effectiveness.
 - Safety plan and training
 - Fume hoods must be available for any work involving toxic chemicals.
 - SDS' should be readily available.
 - Spill kits must be available.
 - Signage in areas where hazardous chemicals are stored and used.
 - Fire extinguisher
 - Hand washing stations
 - Eye wash stations
 - Emergency shower
 - Designated space apart from laboratory operations for desk work, eating and drinking.

-Quality control requirements for microbiology

- Documentation requirements for reagents, controls, and standards –
 - Reagent/Control/Standard containers must be labeled with identity of material.
 - Receipt date or preparation date, as applicable.
 - Expiration date.
 - Receiver's and/or preparer's initials.
 - Open date.
 - Storage conditions
 - Lot number or lab-assigned standard ID number
 - Lot numbers or standard ID numbers must be documented for each preparation and analytical batch.
- Negative control – The negative control contains another organism to demonstrate method selectivity. The organism may be similar in nature to the target organism and does not produce the same reaction as the target organism. Negative controls will differ depending on the technology used. For media based methods, one negative control must be analyzed on each lot of media before use. If a negative control fails and samples were analyzed concurrently, samples with a negative result may be reported with comment. All other samples must be invalidated. For qPCR a negative control is required for every batch. If a negative control fails, associated samples with a negative result may be reported with comment. All other samples must be invalidated
- Positive control – The positive control contains the target analyte/strain of interest. Positive controls will differ depending on the technology used. For media based methods, one positive control must be analyzed on each lot of media before use. If a positive control fails and samples were analyzed concurrently, samples with a positive result may be reported with comment. All other samples must be invalidated. For qPCR a positive control is required for every batch. If a positive control fails, associated samples with a positive result may be reported with comment. All other samples must be invalidated.
- Duplicate sample - One duplicate is required per sample batch of five (5) client samples or less. A duplicate sample is subjected to all of the same steps as the original sample. For qualitative analyses, if the duplicate sample does not equal the sample result, the sample and its duplicate must be reanalyzed. Consideration should also be given to possibility of re-preparing and reanalyzing all associated samples. For quantitative analyses, if the RPD of the sample and duplicate is greater than

100, the parent sample and duplicate sample must be reanalyzed. Consideration should also be given to possibility of re-preparing and reanalyzing all associated samples. When data are accepted, the result for the sample portion designated as the “original sample” is reported.

- Temperature monitoring (see “Laboratory facilities and equipment”)
- Sample preparation documentation is required for pre-enrichment and sample preparation steps and shall include the unique ID of the negative and positive controls, the client samples associated with the controls, the weight of the subsample used, the unique ID of all media and reagents used in pre-enrichment and to prepare the samples, dates/times and temperature samples are placed into and remove from the incubator, the preparer’s initials, and the date and time of preparation.
- Sample analysis documentation is required. Time and date samples are placed in the incubator, removed from incubator, and analyzed or examined must be recorded, along with observations or instrument raw data.
- Any verification steps required by the method must also meet the same documentation requirements as preparation and analysis.
- Documentation of macroscopic and microscopic examinations shall include pictures and written observations.

Reporting

The laboratory report is required to contain the following elements.

- Testing laboratory’s name and physical address. If a subcontract laboratory is used for part or all of the testing, the report must identify the name of the subcontract laboratory and identify the specific testing it performed.
- The report date.
- A unique sample number or alpha-numeric number assigned by the laboratory’s receiving and accessioning processes.
- The name of the person submitting the sample for testing and the identifier assigned by the submitter for each sample.
- The date and time the laboratory received the sample.
- Sample matrix.
- The chain of custody record documenting the transfer of the sample from the submitter to the laboratory. If the laboratory submits a sample to a subcontract laboratory, documentation of that custody transfer must also be included in the report.
- A name for each test method and identity of each individual parameter determined by the method.
- The published method or laboratory SOP unique ID for each test method.
- The numerical or text result for each method or individual parameters of a method. If the parameter is not detected, the laboratory can provide the result as “Not Detected”, “ND”, “Not found”, etc.
- The units for each result, as applicable. If the parameter is not detected, the units are still required for the report.
- The MRL for each numerical result, as applicable. If the parameter is not detected, the MRL is still required for the report.
- A report project narrative discussing anomalies or quality control outliers and related corrective action steps encountered during sample receiving, sample preparation, or analytical testing.
- Report results to the MRL, as applicable, unless otherwise specified on a per client or per project basis.
- Amended reports must indicate in the report project narrative what changed from the original report, the reason for the change, and the date of the revised report.
- Chemistry results for plant material must be reported on a dry weight basis (DWB). The percent (%) solids result must be reported separately. Chemistry results for all other sample matrices are reported on an ‘as received’ basis.

$$\text{Result (DWB)} = \text{wet wt. sample result} \times \frac{100}{\% \text{ Solids}}$$

- Each required test, whether failing or passing, must be reported in METRC within 24 hours (i.e. one (1) calendar day) of the test completing as per 3AAC306.670. “Test completing” is defined by this document as the sample and related preparation batch and analytical batch QC have been successfully analyzed.

Proficiency Testing

To obtain and maintain a license to perform testing, the laboratory must participate in Proficiency Testing (PT) for each test. This testing ensures accurate results are being produced by licensed laboratories, regardless of methodology. For multi-parameter tests (e.g. potency and terpenes testing), the laboratory must successfully identify and quantitate 80% of the target analytes. Any false positive or false negative results are considered unsatisfactory.

Required analyses – applies to regulated constituents (*Aspergillus niger, flavus, fumigatus, E.coli, Salmonella*, THC, THCA, CBD, CBDA, CBN for each matrix being tested. Sample matrices are cannabis plant material, any edible matrix, or a concentrate. PTs are required for a new analyst, a method validation, and ongoing on an annual basis per lab (vs. per analyst).

Treatment of PT samples – PT samples are treated the same as commercial samples, undergoing the same size reduction, subsampling, pre-treatment, extraction, number of analyses, and analysis procedures. If any special handling is necessary (e.g. sample prep, unit conversion), this treatment is documented with the statement. PT samples may not be reanalyzed to confirm results, may not be analyzed in duplicate, or analyzed with additional QC beyond what is performed for client samples.

Laboratories may report multiple results for a given sample that represent multiple prep and/or analytical protocols/combinations, multiple matrices, or multiple analytical staff. Laboratories may not send a PT sample to another lab and report that lab's result(s). Conversely, a laboratory may not knowingly analyze a PT sample received from another laboratory. Laboratories may not compare results with another laboratory.

The Laboratory Director must sign an attestation statement when submitting results that indicates the PT samples were integrated into the routine sample workflow and did not receive special treatment.

Reporting - PT reports are submitted to the entity producing and issuing the samples for scoring. Score reports are sent to the laboratory and AMCO simultaneously. The scored results may be used in part or in whole for decisions regarding licensing/certification status. Reports of PT results may be amended when errors attributed to the PT sample provider are identified or when a clerical error unique to the reporting of PT samples is discovered. The reason for an amended report must be discussed in the PT report project narrative and is subject to rejection or request for additional information issued by the PT provider or AMCO.

Acceptance limits and grading – established by the PT provider and determined by provider's in-house testing, factoring in participating lab performance. Acceptance limits are associated with all quality control testing processes and analytes.

Corrective action – see corrective action in QM section.

Audits

Internal – One internal audit for each sample preparation and test method the laboratory performs must be conducted within six months from the date of implementation. A report must be generated for each internal audit, containing:

- Audit date(s)
- Auditor name
- Date of the report
- Title of the report indicating the method(s) audited
- Name(s) of staff interviewed for the audit
- Questions/topics explored during the audit
- Findings
- Due date for corrective action response

Internal audit reports and the associated corrective action response must be minimally available for inspection within five years of the end of the audit.

Internal audits may be horizontal or vertical in nature. A horizontal audit reviews one particular aspect that is implemented across a laboratory, e.g. document control. A vertical audit reviews one aspect of an operation that is not performed throughout an organization, e.g. extraction for potency testing. These audits are intended, in part, to assess adherence to SOPs and good laboratory practice and to perform a gap analysis of a procedure or quality system(s).

Auditor qualifications for internal audits

The concept of someone being trained or qualified as an auditor is defined by a person's skill set and experience. The following aspects are traits and skills to evaluate when identifying a person to be an internal auditor. All of the items below are not required to have a 'yes' answer.

- Overall technical knowledge and experience relative to the audit subject.
- Objective thinking ability.
- Capability to investigate independent of a checklist and has the initiative to pursue unplanned routes of inquiry.
- Professionalism demonstrated with sound judgment and strength in interpersonal skills.
- Fair and respectful of confidentiality when needed.
- Understanding of the lab's quality policies and procedures.
- Ability to stay focused on an audit scope.
- Ability to write a detailed and coherent narrative.

External – External audits may be requested and/or conducted by AMCO or other entity that is an unrelated business concern to the laboratory. The laboratory must allow access to the laboratory and all documentation for purposes of the onsite audit, in order to maintain laboratory certification with AMCO. The resulting audit reports and the corrective action response(s) must be submitted to the auditor and AMCO within one week of completion of the corrective action plan, even if not all of the corrective actions have been implemented or verified to be effective. All corrective actions must be approved by the auditing entity before the audit is considered to be closed.

Corrective action – see corrective action in QM section.

Homogenization and Sub Sampling Considerations

Homogenization can be thought of as two parts: breaking the sample down into smaller pieces, and mixing those pieces uniformly. While breaking down a sample into smaller pieces may need only occur initially, mixing should take place each time a subsample is taken. All samples are expected to exhibit some degree of non-uniform distribution of target analytes. Therefore, the entire sample should, ideally, be homogenized before taking subsamples or aliquots for testing.

If not practical to homogenize the entire sample, multiple portions must be taken from all parts of the sample and homogenized before subsampling or analysis. Considerations must be taken to prevent contamination or cross contamination between samples. Using clean (sterile if microbiology testing) scissors/scalpel and tweezers to randomly and representatively collect multiple portions. Visually assess the sample for varying features, taking portions from each feature. If the sample is in a container that makes difficult accessing all areas of the sample, considering emptying the sample out onto a clean (sterile if microbiology testing) surface.

The QA Manual or SOP(s) must describe, in detail, homogenization and sub sampling procedures, including:

- How are subsamples taken?
- How are sample materials homogenized?
- What are the required sample sizes for different types of samples and tests?
- Sample homogenization and sub sampling procedures for each of the following types of samples :
 - Flower and other plant parts may be homogenized in a mill, blender, food processor, laboratory homogenizer or other mechanical method.
 - Concentrates: Liquid concentrates may be homogenized by agitation (vortexing, blending, or shaking) before subsamples are aliquoted. Foam generated during agitation can result in a non-homogeneous distribution of target parameters. Use mechanical means (e.g. sterile wood applicator), freezing, or chemical means (e.g. mixing in salt) to force the foam back into solution. If multiple subsamples are taken, agitation should take place frequently during subsampling (no more than about two minutes should elapse between agitation and aliquoting). Thicker (oil like) concentrates may be mixed using sterile spoons or other utensils (clean utensils free of the analytes of interest may be used if not sampling for microorganisms.)
 - Edibles: Consideration for each of the following types of edibles must also be described in detail:
 - Flour Based: may be homogenized using a mill, blender, food processor, laboratory homogenizer, or other chemical method.
 - Sugar Based: may require different techniques depending on the matrix. Hard candies or chocolates may be pulverized in a mill or food processor (avoid elevated temperatures), while gummies and other soft/chewy candies may be cut into small pieces using sterile utensils. (Note: FDA recommends mixing hard candies/caramels with equal masses of water and heat to boiling, except if testing for microbial or volatile constituents.)
 - Drinks: may be homogenized by agitation (vortexing, blending, or shaking) before subsamples are aliquoted. If multiple subsamples are taken, agitation should take place frequently during subsampling (no more than 2 minutes should elapse between agitation and aliquoting).
 - Crystalline: may be broken down into finer particles and homogenized by blenders, food processors, mills, or a laboratory homogenizer before taking subsamples.

From: [Brenda Greenbank](#)
To: [CED AMCO REGS \(CED sponsored\)](#)
Subject: Annual license fee increase
Date: Monday, June 17, 2019 11:44:06 AM

My name is Brenda Greenbank. I own shares in S.E.A.L., Southeast Alaska Laboratories. We are working towards opening for business very soon in Juneau. It has come to our attention that the MCB is seeking a \$3,000.00 increase concerning our annual license fee, from \$2,000.00 to \$5,000.00. As there are no reasons provided by the MCB for doing so, I am here taking a stand against this change.
Thank you for your time and consideration...

Brenda Greenbank
Southeast AK Laboratory
Juneau, AK

Sent from my iPad

From: [Cathy Johnson](#)
To: [CED AMCO REGS \(CED sponsored\)](#)
Subject: Proposed changes to facilities
Date: Thursday, June 13, 2019 10:21:29 AM

Marijuana Control Board Members and Staff,

I'd like to express my concern about the proposed changes in the new Marijuana Testing Facility Compliance Document. I feel these changes to the regulations warrant comment and explanation from the authors and the board, as some of the regulations are not consistent with universally scientifically accepted practices. Furthermore, changes that will now require a physical modification in the laboratory for us put our business at risk for damage to instruments and time loss due to construction, though our initial laboratory schematic was approved by the MCB.

Thank you,
Cathy Johnson

Cathy Johnson
[907-723-3290](tel:907-723-3290)

"We can't control our destiny, but we can control who we become." – Anne Frank

Comments from R.C. Tinderbox

3 AAC 306.435. Marijuana inventory tracking system (a) A marijuana cultivation facility shall use a marijuana inventory tracking system in compliance with 3 AAC 306.730 to ensure all marijuana propagated, grown, or cultivated on the marijuana cultivation facility's premises is identified and tracked from the time the marijuana is propagated through transfer to another licensed marijuana establishment or destruction. The marijuana cultivation facility shall assign a tracking number to each plant over eight inches tall.

We support this change to the regulations.

3 AAC 306.445. Standards for cultivation and preparation. (a) A marijuana cultivation facility shall use registered scales in compliance with AS 45.75.080 and 3 AAC 306.745.

- (a) Harvested marijuana will be segregated into harvest batches.
- (b) Once a harvest batch has been uniformly dried and cured, it shall be put into harvest batch packages not exceeding 10 pounds each. A sample of each harvest batch package in accordance with 3 AAC 306.455 shall be submitted to a marijuana testing facility.
- (c) Once a harvest batch sample has passed all required testing, a marijuana cultivation facility may then repackage marijuana from that harvest batch for sale or transfer.

We support this change to the regulations.

3 AAC 306.455. Required laboratory testing. (a) A marijuana cultivation facility shall provide samples of each harvest batch of marijuana produced at the facility to a marijuana testing facility and may not sell or transport any marijuana, **except as provided for in (c) of this section**, until all laboratory testing required under 3 AAC 306.645 has been completed.

(b) To comply with (a) of this section, a marijuana cultivation facility shall (1) collect a representative [, HOMOGENOUS] sample for testing from each harvest batch **package** that has been uniformly dried and cured, in an amount as set out in the following table:

Harvest Batch Package Size (pounds)	Number of 1g sub-samples to make up required sample [QUANTITY OF SAMPLES (1G EACH)]
1	4
2	4
3	5
4	6
5	8
6	10
7	11
8	13
9	14
10	16

We support and follow this rule for samples now.

3 AAC 306.470 (a)(1)(B) is amended to read:

(B) in a wholesale package not exceeding **10** [FIVE] pounds for repackaging by the retail marijuana store; or (Eff. 2/21/2016, Register 217; am // , Register)

We support this change to regulations.

AAC 306.565(c) is amended to read:

(c) Except as prohibited in 3 AAC 306.555(b)(2), a licensed marijuana product manufacturing facility may transfer marijuana concentrates in wholesale packages not to exceed **10** [FIVE] pounds to another licensed marijuana product manufacturing facility or a licensed retail marijuana store. (Eff. 2/21/2016, Register 217; am 2/21/2019, Register 229; am // , Register)

We support this change to the regulations.

3 AAC 306.660 is repealed and readopted to read: 3 AAC 306.660. Failed materials; retests.

(a) If a sample tested by a marijuana testing facility does not pass the required tests based on the standards set out in 3 AAC 306.645, including a visual foreign matter inspection, the marijuana establishment that provided the sample shall dispose of in accordance with 3 AAC 306.740, the harvest batch package or production lot from which the sample was taken.

(b) If a sample of marijuana fails a required test, any marijuana plant trim, leaf, and other usable material from the same harvest batch package fails the required test. The board or director may approve a written request, on a form prescribed by the board, to allow a batch of marijuana that fails a required test to be used to make carbon dioxide- or solvent-based extract. After processing, the carbon dioxide- or solvent-based extract must pass all required tests.

(c) If a marijuana cultivation or a marijuana product manufacturing facility submits a written request, on a form prescribed by the board, for a retest of marijuana or a marijuana product that failed a required test, the board or director may authorize a retest to validate the test results. The marijuana cultivation facility or a marijuana product manufacturing facility shall pay all costs of a retest.

(d) When requested by a marijuana product manufacturing facility, the director may authorize a retest of a marijuana concentrate that passed a required test when the licensee wishes to reprocess a marijuana product to further reduce residual solvent levels. The marijuana product manufacturing facility shall pay all costs of a retest. (Eff. 2/21/2016, Register 217; am 7/5/2017, Register 223; am 10/20/2018, Register 228; am // , Register)

We support the changes made to the regulations.

3 AAC 306.990 (b) (3) is amended to read:

(3) "batch" or "harvest batch" means a specifically identified quantity of **bud and flower**, plant trim, leaf, and other usable product from marijuana plants, that are uniform in strain, cultivated in one place and under the same conditions, using the same medium and agricultural chemicals including pesticides and fungicides, and harvested at the same time; (Eff. 2/24/2015, Register 213, am 2/21/2016, Register 217; am 10/11/2017, Register 224; am 8/11/2018, Register 227; am 10/20/2018, Register 228; am // , Register).

We support the changes made to the regulations.

3 AAC 306.100(d) is amended to read:

(6) for a new marijuana testing facility license, \$1,000, and for a renewed marijuana testing facility license, **\$5,000** [\$2,000];

We feel this is acceptable do to the fact all of the license's fees went up.

3 AAC 306.620(c) is amended to read:

(c) The board will approve a marijuana testing facility license if, after the board or the board's contractor has examined the qualifications and procedures of the marijuana testing facility license applicant **and documented the conclusions of the examination in a written report**, the board finds them generally in compliance with good laboratory practices **and their application meets the requirements of this section**. Nothing in AS 17.38 or this chapter constitutes a board guarantee that a licensed marijuana testing facility can or will protect the public from all potential hazards of marijuana including microbials, poisons or toxins, residual solvents, pesticides, or other contaminants.

We feel this is a part of the board that can use some help and I feel a person qualified that knows lab testing ,equipment used, understand Proficiency testing as a well as the SOP's and have some understanding of what they mean , as well as providing the board direction on the type of products that are being made, how they are being made and an understanding of type of potential risks to public. If AMCO is taxed with trying to approve a lab, they need someone on the board that understands the lab practices and how a lab IS run.

This is in no way a negative on AMCO, just an observation, over 4 years and see a NEED. Brandon Emmett filled some of that need on the board by having a medical background and I observed how much he helped answer a lot of the board questions as well as questions from the public.

3 AAC 306.635(a) is amended to read:

(3) comply with the Marijuana Testing Facility Compliance Document, dated 2019 and adopted by reference; a marijuana testing facility whose license was first issued prior to [effective date] shall comply with this subsection by [effective date + six months].

We feel this appropriate and is effective tool for compliance.

3 AAC 306.640(b) is amended to read:

(b) The scientific director of a marijuana testing facility shall approve, sign, and date each standard operating procedure, and each revision to any standard operating procedure. Each revision to any standard operating procedure shall be provided to the board within 10 days of approval by the scientific director for review by the board or the board's contractor. The revised standard operating procedure shall not be implemented until approved by the board or the board's contractor.

We feel this should be mandatory.

From: [Southeast Alaska Laboratories](#)
To: [CED AMCO REGS \(CED sponsored\)](#)
Subject: Testing Facility Compliance Concerns
Date: Saturday, June 15, 2019 8:32:06 AM

Dear MCB Members and Staff,

I'd like to express my concern about the proposed changes in the new Marijuana Testing Facility Compliance Document. I feel these changes to the regulations warrant comment and explanation from the authors and the board, as some of the regulations are not consistent with universally scientifically accepted practices. Furthermore, changes that will now require a physical modification in the laboratory for us put our business at risk for damage to instruments and time loss due to construction, though our initial laboratory schematic was approved by the MCB.

Regards,

Jessica Dreibelbis
CEO/Manager
Southeast Alaska Laboratories LLC
907-789-5227 Main
[315-778-1469](tel:315-778-1469) Cell
seaklabs@gmail.com

From: [Stephanie Driscoll](#)
To: [CED AMCO REGS \(CED sponsored\)](#)
Subject: Comments on New Marijuana Testing Facility Compliance Document
Date: Wednesday, June 12, 2019 2:19:05 PM

MCB Board Members and Associated Staff,

The general public has been invited to comment on the new Marijuana Testing Facility Compliance Document containing the new purposed regulations put forth by the State of Alaska Marijuana Control Board.

The following comments are based off of my professional experience and opinions as a lab technician and the party responsible for microbial testing in our laboratory.

Section: Quality Control requirements for Microbiology:

Negative Controls:

The new document suggests introducing a known organism (different from the target organism) into the negative controls for qPCR.

A **negative control** is a [control group](#) in an experiment that uses a treatment that isn't expected to produce results.

A **positive control** is a [control group](#) in an experiment that uses a treatment that is known to produce results.

Introducing a different organism into the negative control of a target organism is unnecessary. We are already targeting the organism in our positive controls. The negative control we use to monitor the integrity of our reagents (as the negative control contains only reagents and water, we are able to tell if the results come out positive that our reagents have become contaminated and our tests are invalid.) This is the standard operating procedure that is validated by Medicinal Genomics Corporation and is followed by every lab that uses their products for microbial and fungal analysis. As far as I know, this is the only scientifically validated qPCR procedure in the United States for cannabis microbials, and it is my professional opinion based on observations and performance of the SOPs that this procedure is satisfactory and produces reliable and reproducible results. Changing the preparation of the negative controls for this SOP will invalidate the procedure, which is not recommended by Medicinal Genomics or by Shawn Kasner, the state scientific inspector. The official, validated procedure is available here:

https://system.na3.netsuite.com/core/media/media.nl?id=1184970&c=1280717&h=a62cd50a40b4e1e179c8&_xt=.pdf&whence=

Section: Proficiency Testing: (Also Lab Fees)

We are all for participating in proficiency testing. When we inquired about our lab licensing

fees being raised we were informed that it was to help pay for proficiency testing. Assuming that the proficiency testing will be through Emerald Scientific, The Cost of the kits for potency, microbials, residual solvents and terpenes is roughly \$2000. The MCB is suggesting a \$3000 raise on our lab fees so we are confused as to where the extra \$1000 is going. We already have incredibly high overhead costs with shipping to our unique location and cannot afford to pay an extra \$3000 a year to operate. We would have no problem paying for our proficiency testing ourselves, and we think that this option is much more transparent and less cumbersome than having the MCB board deal with it.

Section: Quality Control Requirements for Chemistry:

On page 10 it has been suggested that we need an emergency shower.

On our initial MCB approved Laboratory Schematic, there was no shower in the laboratory. Furthermore, we don't even have a floor drain in the concrete floor. Installing a shower at this point (after having the facility approved by the MCB) would involve us removing a concrete floor and sheet rock and installing plumbing both in the floor and in the walls. We would have to remove nearly all of our instruments (to avoid sheet rock dust) and recalibrate them once the shower was installed. The reagents and standards required to recalibrate the instruments are incredibly expensive and the procedure itself is time consuming. We just finished calibrating the instruments 2 months ago when Shawn Kassner flew up to inspect our laboratory. He did not seem to think we needed a shower in the lab.

The amount of chemicals we are using that could require a shower is minimal. When we are handling these particular chemicals in the laboratory, we are doing it in tandem and while wearing proper PPE and observing the SDS manual pertaining to each chemical. There is a very low risk of actually needing the shower, in our opinion.

Otherwise, I have no further comments or objections to the proposed changes. We are already meeting or exceeding many of them as The Director and I were aware of the adoption of ISO 17025 and have been striving to meet that standard at the suggesting of Shawn Kassner.

Please let me know if there is a need for clarification of any of my comments, I would be happy to help.

Have a wonderful day!

Stephanie Driscoll
Stephanie.SEAKLabs@gmail.com
Lab Technician
Southeast Alaska Laboratories

Southeast Alaska Laboratories

Seaklabs@gmail.com
5450B Jenkins Drive
Juneau, Alaska, 99801

From: [Stephanie Driscoll](#)
To: [CED AMCO REGS \(CED sponsored\)](#)
Subject: More Comments on New Marijuana Testing Facility Compliance Document
Date: Wednesday, June 12, 2019 4:15:30 PM

MCB Board Members and Associated Staff,

I have some additional comments about the document.

Section: Reporting

"Chemistry results for plant material must be reported on a dry weight basis..."

Any cannabis plant material purchased legally at a retail store in Alaska by a consumer will not be additionally dried by the consumer. In other words, when somebody buys cannabis for personal use, they do not go home and dry it in the oven before using it. This is what the MCB is asking us to do. Why would we need to dry the cannabis to test it? Drying the cannabis would give an inflated potency analysis for what the actual product sold to a consumer would be.

The burden of correctly drying and curing the cannabis is on the grow facility, not the laboratory. We accept samples only in their ready for sale retail packaging or in their shipment packaging (if being used for manufacturing). We do not accept samples that are not hypothetically "ready for sale". Modifying the plant in any way after we have taken custody of it is irresponsible and opens us to myriad of potential issues. We are vehemently against this as are many grow facilities and retail stores, as the subject has been brought to us multiple times. We have written our SOPs as such that we do not dry the plant material. We do however, take a small representative sample and do a moisture content analysis. Drying the entire sample is unnecessary.

Thanks for your time, Again!

Stephanie Driscoll
Stephanie.SEAKLabs@gmail.com
Lab Technician
Southeast Alaska Laboratories

Southeast Alaska Laboratories
Seaklabs@gmail.com
5450B Jenkins Drive
Juneau, Alaska, 99801

Submitted By	Comment
<p data-bbox="190 233 483 338">6/12/2019 5:06:07 PM Anchorage, AK, US Anonymous User</p>	<p data-bbox="812 233 1435 436">I am submitting this comment stating that I oppose the proposed marijuana testing facility compliance document as written. It contains requirements that are not scientifically valid and it I believe it requires modification to address at minimum:</p> <ol data-bbox="812 443 1435 1875" style="list-style-type: none"> <li data-bbox="812 443 1435 1035">1. The requirement to use surrogate samples for QC requirements makes no sense and is not scientifically valid. The use of a surrogate is essentially equivalent to an "internal standard". Using an internal standard for HPLC potency testing does not make sense. This really seems like a kitchen sink type approach for QC's without any merit. I think that whoever wrote the compliance document needs to justify these requirements just as much as labs are required to follow them. This is a ridiculous and onerous requirement. There are two basic approaches to calibration and QC. One with an external calibration using reference materials and one being an internal standard using a surrogate compound. Using both makes absolutely no sense. It makes even less sense for HPLC. <a data-bbox="812 1041 1435 1066" href="http://www.chromatographyonline.com/when-should-internal-s">http://www.chromatographyonline.com/when-should-internal-s This article explains it better than I can. This requirement would add even more costs to laboratories without providing any benefit to its clients. It must be pretty easy for a state lab that isn't required to be profitable to stay open and provide state jobs to make non-sensical and onerous requirements such as this. <li data-bbox="812 1318 1435 1556">2. There is a later mention in the required QC section for an "internal standard" this is essentially a duplication of the requirement of what I just discussed in #1. Is anyone proofreading this document that knows anything about analytical chemistry other than the author? <li data-bbox="812 1562 1435 1799">3. Your requirements for both an LCS and MS and MSD as well as a ICAL and CCV make no sense. In our method validation, the difference between matrix effects and and the method were demonstrated. requiring all of these is redundant and will not do anything to make testing results more accurate. <li data-bbox="812 1806 1435 1875">4. The requirements for negative controls in the microbiological controls make no sense. Adding

Submitted By	Comment
	<p>another organism to demonstrate method selectivity makes absolutely no sense when this method has already been extensively validated. The point of a negative control is to show that your process is free of contamination. Method selectivity is shown by the validated method that the lab is using. Most cannabis labs are using a QCPR kit my medicinal genomics which has already produced an extensive validation of their method. Spiking a negative control with another organism is absolutely ludicrous. Please post something on the AMCO website to defend this ridiculous requirement.</p> <p>5. I've saved the best for last: the requirement among so many that makes the least sense of all: reporting potency results for plant materials on a dry weight basis. This makes absolutely no sense. No consumer is going to dry their material before consuming it. Maybe if it is soaking wet and of terrible quality, a consumer may dry it. This requirement could encourage growers to sell wet plant material which could greatly boost their profits since the reported potency results would be based on dry material and would look perfectly acceptable while the product they are selling is a complete scam. Wet marijuana weighs more; do I need to state the obvious here? All marijuana potency results should be reported on an as received basis just as the consumer would consume them. It puts everyone on a level playing field and it holds growers accountable for properly drying their products.</p> <p>Lastly, please have this document reviewed by someone else who knows anything about science outside of our insular state of Alaska. It would be totally obscene to require all labs in the state to follow these unfounded and un-reviewed requirements somehow deemed legitimate because the guy that wrote them works at the State lab and claims to be the authority on these matters. Somehow that's acceptable in this state because most people don't know any better.</p>
<p>6/11/2019 7:03:41 PM Anchorage, AK, US Anonymous User</p>	<p>The proposed testing facility license renewal fee increase from \$2000 to \$5000 is a very large increase and will make it more difficult for a</p>

Submitted By	Comment
	<p>testing facility to be able to make a profit in an industry that is already heavily taxed and regulated to the point of making being profitable very difficult without any fee increases. This increase may cause labs to shut down which could put Alaskan's out of of jobs in a state where the economy is already in bad shape. This increase in fee's will need to be passed on to the lab's customers which are already paying high fee's in taxes and are having difficulty staying in business already. I and many other Alaskan's oppose this fee increase.</p>
<p>5/20/2019 11:26:16 AM Sam Hachey Sam@tananaerbcompany.com Anchorage, AK, US Anonymous User</p>	<p>Greetings, Thank you for taking the time to read my comments. I agree we need a standardized testing procedures. We must be aware of requiring the labs to homogenize individual samples then test them separately. From my understanding; the testing lab collects the samples provided by the grower, they then blend the entire sent sample together, they then take a small sample from the larger harmonized (grower provided) samples to actually test and record results. If we require the lab to create smaller samples sizes from the original sent in sample and then ask that they test each smaller sample separately, we will have created a monster. That will dramatically increase the SOP and cost for the lab to preform the test many times on essentially the same product. I can only imagine tests will go from \$250 (currently) to many more times that if they require multiple sample tests on the single harvest batch. this will make it very difficult to continue business as a small company in Alaska. We must bring consistency to our state, but not at the cost of the grower. Thank you, Sam Hachey</p>

From: [Jonathan Strong](#)
To: [CED AMCO REGS \(CED sponsored\)](#)
Subject: Public Comment: Testing SOP Review
Date: Wednesday, June 19, 2019 9:38:07 AM

Regarding the following proposed changes to regulation:

3 AAC 306.640 is proposed to require changes to standard operating procedures be submitted to the director and approved by the board's contractor.

Do not approve this change. Adding a requirement that every SOP update be reviewed will significantly delay the pace of improvements to testing. One of the guiding principals of quality systems such as ISO 17025 is continual improvement. This requirement would directly block continual improvement. We all want improvements to testing, but this change would have the opposite of it's intended effect.

The other requirements in this regulations project (requiring testing facility audits, and adding a guidance/compliance document) are appropriate, and will help improve testing for the industry.

Thank you for your work,

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Jonathan Rupp Strong, Ph.D.
Scientific Director, CannTest, LLC
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