

AFFIDAVIT

JANINE S. ARVIZU, having been duly sworn, hereby states as follows:

1. I am a quality consultant and laboratory quality auditor located in Tijeras, NM 87059.
2. My education includes a B.S. degree in biochemistry (California Polytechnic State University at San Luis Obispo, 1976) and ABD in chemistry (University of New Mexico). I am certified as a Quality Auditor (American Society for Quality, certificate #19856) and I specialize in assessments of laboratories. I have successfully completed a Lead Auditor training course for assessors of laboratory quality systems that was certificated by the International Register of Certificated Auditors.
3. From 1982 – 1992, I was employed by EG&G Idaho, Inc. (operating contractor for the Department of Energy's Idaho National Engineering Laboratory). In the course of my career, I established and managed an analytical chemistry laboratory for the Department of Energy, developed and implemented analytical quality assurance programs, and served as Lead Auditor for dozens of laboratory audits. I served as Program Manager for the U.S. Navy's nationwide laboratory Quality Assurance Program; in this capacity I managed the audit program that evaluated government and commercial laboratories, and performed independent assessments of data quality. I have testified as an expert witness in federal and state court.
4. This affidavit provides my opinion regarding laboratory quality assurance issues in the District of Columbia case involving Mahdi Lawson (J-2629-05), including: the requested items of laboratory documentation are relevant and necessary to assess the validity and reliability of the laboratory's reported results; contamination control practices in use by the laboratory are important to the subject case; the scientific validity of the laboratory's analytical protocol must have been empirically determined for the results to be valid; and only through an on-site assessment of the laboratory facility and its operational and control practices can the defense conclusively assess the reliability of the reported results.
5. Even under optimum conditions, laboratory analysis of an unknown material involves a degree of uncertainty. Test procedures have practical technical limitations, and laboratories are operated by people, who make mistakes. As a result, it is a matter of due diligence for any data user to ensure that they understand the reliability and limitations of forensic results that are proposed for introduction as evidence.
6. Discovery – General: At its most fundamental level, laboratory due diligence is performed by reviewing the underlying data and supporting documentation that formed the basis for a laboratory's reported results. In order for any independent party to determine whether a forensic laboratory's reported results are valid and reliable, they must have access to relevant laboratory records and supporting information. The supporting information should be sufficiently detailed and complete so as to enable an independent reviewer to understand all assumptions, and to reconstruct the sequence, events, computations, assumptions, and decisions of the testing process; this is a fundamental requirement of relevant forensic and international quality standards (including ISO 17025, General Requirements for the Competence of Testing and

Calibration Laboratories, and ASCLD-LAB American Society of Crime Laboratory Directors – Laboratory Accreditation Board Manual).

7. Discovery – Case-specific: The laboratory documentation that is necessary for independent review in the subject case includes the following:
- a. Quality Manual (however named) describing the laboratory's quality policies and systems in effect at the time the subject casework was performed.
 - b. Quality procedures (however named; implement the laboratory's quality program. e.g., internal audit procedures, training and qualification procedures, document control procedures, etc.) in effect at the time the subject casework was performed.
 - c. Schedule for internal and external audits conducted during the period casework samples were received and tested; copies of the resulting audit reports and corrective action documentation.
 - d. Laboratory production data for the tests performed in the subject case; number of tests performed in 2005 (TLC, microscopic exam, and Duquenois-Levine).
 - e. Standard Operating Procedures (SOPs) for each of the methods used in the subject case: identification of marijuana via TLC, microscopic examination, and Duquenois-Levine.
 - f. Case intake and control records (chain of custody records for intra-laboratory transfers of evidence, samples, and aliquots; laboratory evidence receipt log; controlled custody storage log)
 - g. Copy of the SOP for collection of analytical samples from evidentiary materials, i.e., for collection of representative aliquots.
 - h. Copy of the Standard Operating Procedure for contamination control and contamination monitoring in the laboratory; if a formal SOP is not available, provide any documentation generated, disseminated, or used by the laboratory on the topic (e.g., guidelines, memoranda, or instructions).
 - i. Results of contamination control surveys for locations and contaminants relevant to the testing performed in the case (include sampling plans, test results, and corrective action documentation).
 - j. Source, preparation, and usage records for reagents and materials used during testing.
 - k. Copies of bench notes, log books, nonconformance reports, incident reports, and any other records pertaining to case samples, methods, or equipment
 - l. As prepared, and as determined values for all blanks, replicates and controls relevant to case samples
 - m. Source, preparation and usage records that demonstrate traceability for standards and reference materials used for calibration and quality control purposes during casework testing.

- n. Internal and external proficiency testing results for Elizabeth Pascual for each of the three methods used to perform evidence testing in the subject case (including sponsoring agency, dates performed, true values, reported results, raw data, scores, corrective actions, and related correspondence, as appropriate); results should be provided from the tests performed prior to and after the case samples, as available.
- o. Results from validation studies for each method used to analyze evidence. If the DEA Mid-Atlantic Laboratory did not perform a formal validation study for the determination of marijuana using the subject methods, provide a copy of empirical results verifying the laboratory's ability to meet the desired performance characteristics of the method(s) that was externally validated, and a provide explicit reference to the original validation record used by the laboratory.
- p. Copy of the laboratory's most recent Annual Accreditation Review Report (as provided to ASCLD-LAB).

Based on my experience as a laboratory auditor, commercial and government testing laboratories throughout the country routinely make the foregoing documentation and records available for independent reviewers and laboratory auditors, either through provision of copies, or by hosting on-site audits.

8. In the subject case, the only relevant records provided by the laboratory are the completed Form DEA-7 (Report of Drug Property Collected, Purchased, or Seized), the Form DEA-86 (Forensic Chemist Worksheet), the Form LS-05-010 (Laboratory Report, dated 12/22/05), and a one page resume for the responsible analyst (Elizabeth R. Pascual). In my opinion, this documentation is completely inadequate to conduct an independent assessment of the validity and reliability of the laboratory's reported results.

9. The personal testimony of an analyst might be suggested as an alternative to the requested discoverable material; this would not be acceptable. It is important for scientists to base conclusions on contemporaneous records that can be subject to independent scientific scrutiny, not on the best memories of analysts. Throughout the country, laboratory analysts know that "if you didn't write it down, you didn't do it."

10. Validation – General: Validation is the formal process through which an analytical method is empirically determined to be appropriate for its intended use. Through a carefully designed validation study, laboratories determine the suitability of a measurement system to provide test data that are useful for a specific purpose; during method validation the performance characteristics and the error rate of a measurement system can be determined. Analytical methods that are perfectly valid for use in one situation may be completely unacceptable in another. Method validation is a requirement of forensic and international quality standards, and a fundamental scientific necessity.

11. Validation – Case-specific: The validity of the specific series of three tests used by the DEA Mid-Atlantic laboratory to identify marijuana in the subject case is of particular concern, given that the empirical basis for the laboratory's conclusions is not evident from the provided records, and given that the results are reported without uncertainty. Under nationally released minimum standards for forensic drug identification (SWGDRUG Methods and Reports), each of the less discriminating methods used in the

subject case must have been validated. It is also noted that the tests performed in the subject case did not comply with explicit SWGDRUG recommendations for analysis of a minimum of two separate samplings.

12. Contamination – General: In order to consistently report valid and reliable results of trace measurements, there are four essential quality steps: 1) identify sources of contamination, 2) prevent contamination and control sample integrity, 3) monitor for contaminants, and 4) respond to occurrences of contamination. Failure to effectively execute one or more of these steps can render laboratory results invalid.

12.1 Identify sources of contamination: It is important for a laboratory to identify all the actual or potential sources of contaminants that could cause invalid results. The laboratory needs to know where and when contaminants might be introduced to a sample, as well as the mechanisms through which the contaminants might contact a sample (e.g., airborne particulate transport, primary contact, secondary contact). Knowledge about the likely sources of contamination is needed to design effective contamination controls.

12.2 Prevent contamination and control sample integrity: After determining when and where contaminants come from, and how they move, it is possible to design physical and administrative controls to prevent contamination from compromising sample integrity. The central focus of prevention activities is to systematically control sample integrity, so the sample aliquot that is analyzed in the laboratory accurately represents conditions in the field. The quality of a laboratory's test results is inherently limited by the integrity of the samples that are subject to testing. For this reason, the reliability of a laboratory's reported results must be assessed in consideration of the applicable procedures for sample collection and contamination control.

12.3 Monitor for contaminants: In order to assess the impact of contamination at specific points in time and space, laboratories monitor for the presence of contaminants. These efforts serve two purposes. The first objective is to collect empirical data to characterize and monitor normal background levels of contamination. A sampling plan is implemented to measure normal background levels of contaminants associated with sampling and analysis activities and locations.

The second general type of quality control check for contamination is designed to determine whether contamination was associated with collection or testing of a particular set of samples; these samples are generally referred to as negative controls or blank samples.

12.4 Respond to occurrences of contamination: In the event of contamination that adversely impacts the validity of results, a laboratory is responsible for assessing the scope and significance of the contamination, and taking whatever corrective actions are necessary to prevent generation and utilization of invalid results. This would include halting affected work, withholding or withdrawing test reports, and notifying past and present data users that reported results have been invalidated.

13. Contamination – Case-specific: In the subject case, the laboratory performed qualitative tests for the detection of marijuana that are inherently sensitive to small amounts of the target analyte. Given the sensitivity of these techniques, the efficacy of

the laboratory's contamination control practices are relevant to an assessment of the reliability of the reported results.

14. On-site Laboratory Inspection - General: The quality of a forensic laboratory's work product depends on more than the technical ability of individual scientists. Consistent production and reporting of high quality results requires a comprehensive and technically rigorous quality assurance program in an appropriately designed and equipped facility operated by qualified and ethical scientists. Based on my experience in the assessment of government and commercial laboratories, the best means of assessing a laboratory's ability to reliably produce acceptable results is through an independent, on-site quality audit. Although the documentary record is essential for purposes of assessing data quality, copies of documents simply can't provide as much insight as observing the routine working environment in which unknown samples are processed. Some of the most problematic practices or situations that have the potential to adversely impact data quality are simply not documented in the routine record.

15. On-site Laboratory Inspection – Case-specific: To date, the DEA Mid-Atlantic Laboratory has not provided access to the operational sections of the laboratory to those data users who represent defendants; in effect, the data users representing the defense in the subject case have heretofore been forced to accept the reliability of reported analytical results in blind faith. As a user of the laboratory's data, the defense is effectively the laboratory's client; the defense or its representative should be afforded the opportunity to directly monitor the laboratory's performance and assess the reliability of the results reported in this case.

16. The DEA Mid-Atlantic Laboratory has been accredited by ASCLD-LAB, but this accreditation should not be misconstrued as a guarantee of quality. Accreditation serves as formal recognition that at the time of the assessment, a third party (in this case, the American Society of Crime Laboratory Directors – Laboratory Accreditation Board) has determined that the laboratory had systems in place that met the Society's requirements. As has been demonstrated in recent years by several highly visible failures, ASCLD accreditation does not provide data users with protection from fraud or critical technical deficiencies.

The foregoing is true and correct to the best of my knowledge, information, and belief.
Dated

Janine S. Arvizu

NOTARY PUBLIC in and for the State of New Mexico

Residing at:

My appointment expires: