

Exhibit A



**STATE OF MICHIGAN
DEPARTMENT OF STATE POLICE
FORENSIC SCIENCE DIVISION**

Grand Rapids Laboratory
720 Fuller Ave NE
Grand Rapids, MI 49503
(616) 242-6650
FAX (616) 242-6682

LABORATORY REPORT

Laboratory No. : GR14-6092
Investigating Ofcr. : Patrick Gedeon
Agency : Ottawa County Sheriff Department
Agency No. : 1409240184

Record No. : 1
Date Received : October 13, 2014
Time Received : 9:46 a.m.
Date Completed : December 30, 2014

Nature of Offense:

3500-1 - Controlled Substances: Violation of the Public Health Code

Suspect(s):

Lorincz, Maxwell Morgan
Chittenden, Erica Jo

Evidence Received:

Container #1 : One taped/clasp-closed manilla envelope (#1)
Item #1 : - one white plastic glove containing
 - one plastic vial containing a brown residue

Results of Analysis:

Based upon observations made and the results of microscopic, chemical and/or instrumental analyses performed on the above listed item(s), the following statement of findings is made:

Item(s)	Weight	Substance Identified	Schedule
1	Residue	delta-1-tetrahydrocannabinol (origin unknown)	1

William Ruhf, M.S.
Forensic Scientist
Controlled Substances Unit

December 30, 2014

This report contains the conclusions, opinions, and/or interpretations of the laboratory analyst whose signature appears on this report. This analyst is qualified by education, training, and experience to perform this analysis and does so as part of his or her regular duties. The analysis was conducted in a MSP laboratory accredited under the ASCLD/LAB international program since July 26th, 2012.

The relevant supporting data upon which the expert opinion or inference was made are available for review/inspection.

Exhibit B

I, DONALD PAUL LAND, PHD, declare:

1. I am a professor of chemistry, forensic science, and biotechnology at the University of California, Davis. I conduct research, teach, and publish in the field of analytical chemistry and forensic science and especially in the field of detection and quantitation of controlled substances. Many of those projects are in collaboration with scientists employed at crime laboratories at local (Sacramento District Attorney Crime Laboratory), state (California Department of Justice) and federal (Drug Enforcement Agency, San Francisco Division; Bureau of Alcohol, Tobacco, Firearms, and Explosives, Walnut Creek, CA) levels. I also design and deliver courses in forensic science at undergraduate and graduate levels and particularly teach the theory and practice of controlled substance identification and quantitation and statistical treatment of such data.
2. I also own, operate, and consult for Steep Hill Labs, Inc. (and co-founded Halent Laboratories), a chain of licensed cannabis testing laboratories with locations in Berkeley, CA, Seattle, WA, Albuquerque, NM, Denver, CO, and Las Vegas, NV. These laboratories satisfy local certification protocols that are largely similar to forensic laboratories.
3. I have provided declarations and advice to attorneys and lawmakers in several states in reference to cases involving controlled substances, patent infringement, and matters related to regulation of controlled substances. I have served as a reviewer for the textbook Scientific Evidence, Edward J. Imwinkelried, a textbook cited twice by The Supreme Court of the United States of America in *Daubert v. Merrell Dow Pharmaceuticals*. I have not testified in court. My Curriculum Vitae is attached.
4. I have been asked to review a laboratory file and related documents related to a specific legal case, file number GR14-6092 from Michigan State Police Grand Rapids Forensic Laboratory.
5. Upon review of the data and its accompanying report, it is my opinion that there is an obvious inconsistency between the analytical results contained in the file and the final report issued by the lab.
6. Specifically, the results show that multiple (3) positively identified naturally occurring cannabinoid compounds, at least one of which is known *not* to be psychoactive, were identified in the analysis, but the final report lists only a single compound, delta-1-THC (a.k.a. delta-9-THC). Additionally, several other peaks appear in the chromatogram, are not identified, but are likely to be additional naturally occurring cannabinoids, such as CBG, CBC, and THCV – all of which elute closely in time using most GC methods. Further, the "(origin unknown)" designation is dubious in my opinion, as the identified presence of multiple natural cannabinoid compounds provides clear evidence in support of plant origin, and clear counter evidence contrary to the hypothesis of synthetic origin.
7. There is absolutely no evidence indicated by the analysis detailed in the file that the THC is of synthetic origin - in fact the opposite is true.

- 45 8. There would be no motive for synthesizing and including the additional non-psychoactive
46 compounds. There would be no monetary gain from the extreme effort and expense required to
47 synthesize these compounds, as cannabidiol, in particular, is a THC functional antagonist and
48 reduces the presumed desired psychoactive effects of THC. Only a few naturally occurring
49 cannabinoids have published synthetic routes, and these other natural cannabinoids identified in
50 the sample in question are not identified contaminants or byproducts of the synthetic methods
51 published.
- 52
- 53 9. In addition, on the Laboratory Inspection Request form offered for my review, the
54 submitting officer, in the "Statements of Fact / Comments (required)" section, first refers to the
55 sample as "BHO / Butane Hash Oil," and in the second note, requests "Please test residue for
56 BHO." The submitting officer Vugveteen identified substance as a marijuana extract.
- 57
- 58 10. Indeed, the description of a "brown residue" in the Chain of Custody Report and "brown
59 crystalline material (hard and sticky)" on the Michigan State Police Drug Analysis form, also
60 support plant-based origin. Purified delta-9-THC (THC) is a clear, colorless liquid and purified
61 delta-9-THC Acid (THCA) (the THC plant precursor and indistinguishable from THC using GC-
62 MS analysis as applied by Michigan State Police crime laboratory staff) would be clear, colorless
63 "white" crystals. Extracts from cannabis plant material are almost always reddish-yellow-to-
64 brown/black depending on the degree of purification, with natural pigments proving nearly
65 impossible to eliminate without significant efforts. Synthetic versions are clear and colorless or
66 pale yellow and would not contain significant amounts of other naturally occurring cannabinoids
67 (though sufficient purification of plant extracts could lead to the colorless liquid THC or white
68 crystalline THCA).
- 69
- 70 11. Plants produce delta-9- THC acid (THCA) and only small amounts of delta-9-THC (THC).
71 THCA is not psychoactive and generally requires significant heating to convert non-active
72 THCA into psychoactive THC. Most plant extraction methods (including that for BHO) extract
73 both forms, THCA and THC, equally well and produce extracts similar in composition to the
74 nascent mixture produced in the plant material – i.e., mostly THCA. Further, it is relatively easy
75 to analyze the substance in question using a related chromatography technique – liquid
76 chromatography – which is now common in crime laboratories across the nation, which *can*
77 easily differentiate between THCA and THC. While analysis via GC-MS (as employed by the
78 Michigan State Police crime laboratories) results in chemical decomposition of THCA into
79 (mostly) THC due to a heated sample inlet, liquid chromatography involves no heating and can
80 easily distinguish between acid and neutral forms of cannabinoids, including THCA vs THC and
81 CBDA vs CBD, etc., either by their distinctly differing chromatographic retention times, by their
82 distinctly different ultra-violet absorption spectra, or by their distinctly different mass spectra.
- 83
- 84 12. The presence of significant amounts of THCA in the original sample would effectively
85 preclude a determination that the sample was synthetic in origin, as there is no published or
86 known total synthesis of THCA. No such analysis was performed, and, therefore, the
87 identification of the sample as emanating from a synthetic source could NOT be proven beyond
88 reasonable doubt using the data presented, and, in contrast, significant evidence – even without
89 the additional analysis – leads to a conclusion that the sample is much more likely than not to be
90 of plant origin. Such analysis could be easily performed in many crime laboratories.

91

92 13. I also reviewed emails and laboratory manual pages provided to me which detailed the
93 testing methodology and reasoning used for the sample analysis and final reporting. The decision
94 that was made to report all substances which contain THC but do not include visible plant parts
95 as schedule 1 THC is inherently contradictory and false on its face. The results of analysis
96 contained in the file clearly indicate that this sample should have been reported as marijuana, and
97 to do otherwise is not based in science. Furthermore, methods exist to easily ascertain the likely
98 source (synthetic or natural) of virtually ANY THC-containing sample beyond a reasonable
99 doubt. In fact, several members of the Michigan State Police crime laboratories staff expressed
100 several of these arguments in the email discussion concerning the data already in hand.

101

102 I declare under penalty of perjury of the laws of the State of California that the forgoing is
103 true and correct. Executed this 23rd day of October 2015, at Davis, California.

104

105

106

107



DONALD PAUL LAND, PHD

CURRICULUM VITAE
Donald Paul Land, Ph.D.

Tel: 530-219-4366
dpland72@gmail.com

EDUCATION

Ph.D. Degree in Chemistry; University of California, Irvine, 1989.
Bachelors Degree in Chemistry; Lawrence University, Appleton, Wisconsin, 1984.

HONORS

1995: Sigma Xi , Honorary Scientific Research Society-
1991: Alexander von Humboldt Postdoctoral Fellowship
1988: IBM Corporation Graduate Research Fellowship

PROFESSIONAL AFFILIATIONS

(Current and Former)

American Chemical Society
American Vacuum Society
Phi Lambda Upsilon (Treasurer, National vice-President)
UC Davis Forensic Sciences Graduate Group
UC Davis Chemistry Graduate Group
UC Davis Designated Emphasis in Biotechnology
Americans for Safe Access
International Cannabis Research Society

PROFESSIONAL EXPERIENCE

1/93-Present: *Consultant in Analytical, Forensic, Environmental, and Surface Chemistry*
Expertise in statistical analysis of scientific data, solids and surface analysis, vibrational spectroscopy of solids and interfaces, chromatography, mass spectrometry, laser-desorption, surface microscopy, and infrared and electron spectroscopy.

7/13-Present *Chief Scientific Consultant and Co-Owner, Steep Hill Halent Laboratories, Oakland, CA.*

10/10-7/13 *Chief Scientific Consultant and Co-Founder, Halent Laboratories, Davis, CA.*
Established comprehensive program to study plant content and effects of growth conditions and selective breeding thereon. Developed a testing program to ensure the safety and efficacy of plant products being sold outside of the FDA system of regulation and testing. Assist local, state, and national governments in the design and implementation of regulated testing of cannabis and derived products.

PROFESSIONAL EXPERIENCE *continued*

7/07-Present: *Professor, Department of Chemistry, Forensic Science Graduate Group, Designated Emphasis in Biotechnology, University of California, Davis.*

7/97-6/07: *Associate Professor, University of California, Davis.*

7/91-6/97: *Assistant Professor, University of California, Davis.*

Developed program to study surface chemistry and structure using vibrational spectroscopy, conventional and laser desorption using FT mass spectrometry, and surface microscopy.

Lecture Courses Taught:

Chemistry 2B:	General Chemistry: Thermodynamics, Equilibrium, Acid/Base
Chemistry 2BH:	Honors Gen. Chem.: Thermodynamics, Equilibrium, Acid/Base
Chemistry 104:	Forensic Chemistry
Chemistry 105:	Analytical and Physical Chemistry Methods and Quantitative Anal.
Chemistry 124A:	Introduction to Inorganic Chemistry
Chemistry 125:	Advanced Methods of Physical Chemistry
Chemistry 205:	Graduate Inorganic and Analytical Spectroscopy (Core Course)
Chemistry 240:	Graduate Advanced Analytical Chemistry (Core Course)
Chemistry 241:	Graduate Special Topics in Surface Analytical Chemistry
Forensics 221L:	Graduate Forensic Analytical Methods
Forensics 268:	Graduate Forensics Statistics

Synergistic Activities:

- Co-director (with S. Kauzlarich and C. Lebrilla) and mentor in the UCD Chemistry/ACS Project SEED Program for economically disadvantaged high school students. The program has run every summer for over 10 years, placing dozens of junior-level high school students with university mentors to encourage them to pursue college degrees in chemistry related fields.
- Mentor in the MURPPS (Minority Undergraduate Research Program in the Physical Sciences) program to pair under-represented undergraduate students with faculty mentors.
- Mentor for University of California, Leadership Excellence through Advanced Degrees (UC LEADS), a leadership development/outreach program proposed by the UC Graduate Deans to encourage talented students from educationally disadvantaged backgrounds with a declared major in science or engineering to apply to UC Ph.D. Programs.
- Co-director (with S. Chiang, Physics, and B.C. Gates, Chem. Eng. & Mat. Sci.) of the Advanced Surface Microscopy Facility, a multi-user ultra-high vacuum facility for low energy electron microscopy, scanning tunneling microscopy, x-ray photoelectron spectroscopy, and mass spectrometry.

4/90-6/91: *Alexander von Humboldt Postdoctoral Fellow, IGV der KFA (Institute for Surface Research and Vacuum Physics), Jülich, Germany. (Professor Harald Ibach)*

Conducted studies using vibrational spectroscopy of thin organic films on metal surfaces by Fourier transform reflection absorption infrared spectroscopy and high resolution electron energy loss spectroscopy.

9/89-4/90: *Postdoctoral Researcher, Institute for Surface and Interface Science and Department of Chemistry, UC Irvine. (Professors J.C. Hemminger and R.T. McIver, Jr.)*

Studied surface reaction kinetics by laser-induced thermal desorption with Fourier transform mass spectrometry.

PROFESSIONAL EXPERIENCE *continued*

- 9/84-8/89:** *Graduate Research Assistant and Teaching Assistant, Department of Chemistry, UC Irvine. (Professors R. T. McIver, Jr. and J.C. Hemminger)*
Designed and constructed a surface analysis instrument combining, for the first time, laser-induced thermal desorption, Fourier transform mass spectrometry, Auger electron spectroscopy, and low energy electron diffraction.
- 4/83-7/84:** *Undergraduate Research Assistant and Teaching Assistant, Department of Chemistry, Lawrence University, Appleton, WI. (Professor Robert M. Rosenberg)*
Studied sub-unit interactions of glutamic acid decarboxylase using novel cross-linking agents. Designed, built and implemented gel electrophoresis apparatus for high molecular weight (300,000 D) species. Isolated enzyme from lyophilized *E. coli* bacteria and tested for activity using respirometry. Carried out novel, light-sensitive synthesis of cross-linking agent and characterized using NMR, UV/Vis, IR.

PUBLICATIONS

Since 2000

(Not Including Conference Proceedings)

- Iodobenzene on Pd(111) studied by thermal desorption spectroscopy and laser-induced thermal desorption with Fourier transform mass spectrometry. D. M. Jaramillo, D.E. Hunka, and D. P. Land, *Surface Science*, **445**, 23-31 (2000).
- The interaction of HCl on Pd(111). D.E. Hunka, D.C. Herman, L.I. Lopez, and D.P. Land, *Journal of Physical Chemistry B*, **105**, 4973-4978 (2001).
- X-ray Magnetic Linear Dichroism of Fe-Ni Alloys on Cu(111). T. F. Johnson, S. Chiang, Y. Sato, D. A. Arena, S. A. Morton, M. Hochstrasser, J. G. Tobin, J. D. Shine, J. A. Giacomo, G. E. Thayer, D. P. Land, and X. D. Zhu, *Materials Research Society Symposium Proceedings, Applications of Ferromagnetic and Optical Materials, Storage and Magnetolectronics*, ed. W.C. Black, H.J. Borg, K. Bussmann, L. Hesselink, S.A. Majetich, E.S. Murdock, B.J.H. Stadler, M. Vazquez, M. Wuttig, J.Q. Xiao, Vol. **674**, (2001).
- The Desorption Kinetics of Flat-Lying Benzene from Pd (111). M. Noel Rocklein, Christopher M. Gerth, Tyrone Van Arnold, Donald P. Land, *The Journal of Physical Chemistry B*, **108**, 1009-1013 (2004).
- Magnetic Domain Structures in Ultrathin Fe_xNi_(1-x) Films onCu(111): Dependence on Film Thickness and Stoichiometry. Y. Sato, T. F. Johnson, S. Chiang, J. A. Giacomo, X. D. Zhu, D. P. Land, F. Noltinga, A. Scholl, *Journal of Vacuum Science and Technology A*, **22**, 135-139 (2004).
- Thermal Chemistry of cis-1,2-dichloroethene on Pd(111). D. M. Jaramillo, D.E. Hunka, D.P. Land, *Langmuir*, **20**, 5782-5785, 2004.
- Decomposition of 1,1-dichloroethene on Pd(111). D.E. Hunka, D.C. Herman, K.D. Lormand, D.M. Jaramillo, D.P. Land, *Langmuir*, **21**, 8333-8337, 2005
- Morphological and Spectroscopic Measurements of Plastic Bags for the Purpose of Discrimination. Hashimoto, T., D.G. Howitt, D.P. Land, F.A. Tulleners, F.A. Springer, S. Wang, *Journal of Forensic Science*, **52**(5), 1082-1088 (2007)
- Confidence Intervals: How Much Confidence Should The Courts Have In Testimony About A Sample Statistic? Land, D. P. and E. J. Imwinkelreid, *Criminal Law Bulletin*, James Robertson, Ed., Thomson-West: Eagan, MN, **44**, 271 (2008).

CV – D.P. Land

- Optically Transparent Polycrystalline Al₂O₃ Produced by Spark Plasma Sintering. Jiang, D., D.M., Hulbert, U.A.-Tamburini, T.C. Ng, D.P. Land, and A. K. Mukherjee. *Journal of the American Ceramic Society*, **91**, 151–154 (2008)
- A Kinetic Model for β -Amyloid Adsorption at the Air/Solution Interface and Its Implication to the β -Amyloid Aggregation Process. Dianlu Jiang, Kim Lien Dinh, Travis C. Ruthenburg, Yi Zhang, Lei Su, Donald P. Land and Feimeng Zhou, *Journal of Physical Chemistry B*, **113**, 3160-3168 (2009).
- Separation and Determination of beta(2)-Agonists in Swine Feed Using Field-Amplified On-Line Sample Stacking Method by Capillary Zone Electrophoresis. Chongyang Li and Donald P. Land; *Journal of Liquid Chromatography & Related Technologies*, **32** (15) 2135-2145 (2009)
- A comparison of lateral diffusion in supported lipid monolayers and bilayers. C. B. Babayco, S. Turgut, A. M. Smith, B. Sanii, D. P. Land and A. N. Parikh, *Soft Matter*, **6**, 5877-5881 DOI: 10.1039/C0SM00643B , Communication (2010).
- Use of attenuated total reflectance Fourier transform infrared spectroscopy to monitor the development of lipid aggregate structures. Hernandez, Mateo R.; Towns, Elyse N.; Ng, Terry C.; Walsh, Brian C.; Osibanjo, Richard ; Parikh, Atul N.; Land, Donald P. *Applied Optics*, **51**(15) 2842-2846 (2012).
- Use of attenuated total reflectance Fourier transform infrared spectroscopy to study lactosylceramide and GD3 DMPC bilayers. Hernandez, Mateo R.; Towns, Elyse N.; Moore, Jessica; Lee, Hyeyoung ; German, J. Bruce; Lebrilla, Carlito B.; Parikh, Atul N.; Land, Donald P. *Colloids and Surfaces B-Biointerfaces* **94**, 374-377 (2012).
- The Effect of Laser Power Density on the Observed Products of Combustion of Gasoline Using Laser-Induced Thermal Desorption with Fourier Transform Mass Spectrometry. Hutches, Katherine D.; Wang, Diana; Land, Donald P. *Journal of Forensic Sciences* **58**, Special Issue: SI Supplement: 1 Pages: S192-S198 (2013).
- Evolution of Conformational Order During Self-Assembly of n-Alkanethiols on Hg Droplets: An Infrared Spectromicroscopy Study. Babayco, Christopher B.; Chang, Pauline J.; Land, Donald P.; Kiehl, Richard A.; Parikh, Atul N. *Langmuir* **29**(26) 8203-8207 (2013).
- "Click chemistry" based conjugation of lipophilic curcumin to hydrophilic epsilon-polylysine for enhanced functionality. Tikekar, Rohan V.; Hernandez, Mateo; Land, Donald P.; Nitin, N. *Food Research International* **54** (1) 44-47 (2013).

ACT LABORATORIES, INC.

To Whom It May Concern:

Act Laboratories, Inc. is accredited to the international standards ISO 17025:2005 for the purpose of testing cannabis testing. We have been ask to review a laboratory report related to a specific legal case. With the case number of 1409240184 from Michigan State Police.

Upon review of the data and its accompanying report, it is our opinion that there is an inconsistency with the analytical results and the final report. Specifically, multiple cannabinoid compounds were identified in the analysis, but the final report lists only a single compound which was not found in the data. Further, the "unknown origin" designation is dubious in our opinion as the presence of multiple natural cannabinoid compounds provides clear evidence of a plant origin.

Evan McNabb
Chief Biology Director
Act Laboratories, Inc.

617 East Hazel St
Lansing, MI. 48912

PHONE (517)278-9333[fax]
EMAIL labs@actlabllc.com

Exhibit C

Gormley, Elizabeth (MSP)

From: Hoskins, Kyle (MSP)
Sent: Thursday, May 30, 2013 3:14 PM
To: Penabaker, Scott (MSP)
Cc: Chirackal, George (MSP); Gooden, Dale (MSP)
Subject: RE: Calling THC?

Follow Up Flag: Follow up
Flag Status: Flagged

If I cannot find any identifiable plant material, I am not comfortable calling it marihuana. Others feel the same way, I do. I am going by the evidence presented, not how the law is written. I do always look for plant parts stereoscopically or you could try Dale's method he explained at the meeting.

From: Penabaker, Scott (MSP)
Sent: Thursday, May 30, 2013 2:53 PM
To: Hoskins, Kyle (MSP)
Cc: Chirackal, George (MSP)
Subject: RE: Calling THC?

Once you identify THC and place it in schedule 1 on your report, it automatically becomes the felony. The only place the prosecutor will find "THC" in the law is under this section which by law is a felony punishable by up to two years and \$2000. The prosecutor cannot charge this as a misdemeanor Marihuana offense because that's not what was confirmed.

From: Hoskins, Kyle (MSP)
Sent: Thursday, May 30, 2013 2:36 PM
To: Chirackal, George (MSP); Gooden, Dale (MSP); Choate, Bradley (MSP); Knoll, Derek (MSP); Kidd, Anne (MSP); Penabaker, Scott (MSP)
Subject: RE: Calling THC?

Procedure manual 2.1 section under marihuana states how to report out marihuana. Each submission is the judgment of the analyst to make a reasonable call on the evidence they received based specifically on what they receive. It is up to the court to discern whether they want to jump to a felony. A Michigan legislative bill would need to be passed again to make those wording changes in PHC.

From: Chirackal, George (MSP)
Sent: Thursday, May 30, 2013 2:25 PM
To: Hoskins, Kyle (MSP)
Cc: Gooden, Dale (MSP); Choate, Bradley (MSP); Knoll, Derek (MSP); Kidd, Anne (MSP); Penabaker, Scott (MSP)
Subject: FW: Calling THC?

Please see attached document and email. Something to discuss at unit meeting?

George

From: Penabaker, Scott (MSP)
Sent: Thursday, May 30, 2013 11:36 AM
To: Chirackal, George (MSP)

Cc: Aguzzi, Jeff (MSP)
Subject: Calling THC?

Attached is the language that places "THC" in schedule 1 (MI and Federal). Notice how the Fed statute covers THC that is natural as well as synthetic equivalents. They make a distinction between the two types. However, Michigan law does not. In order to place the actual compound THC in schedule 1, the criteria of "synthetic equivalent" should be met. Since we really can't do this, there are many of us who feel that these new evidentiary materials containing THC without any botanical morphology characteristics (candy, butter, ect..) should be identified as resinous extracts of Marijuana. If you are to call it "THC", at a minimum, a statement should be provided in the additional information stating that the "origin, whether naturally occurring or synthetic could not be determined". Also, by going out on that limb and calling it THC, you now jump from a misdemeanor to a felony charge. We're bringing this up because there seemed to be some concern about uniformity in making these calls. Further, it is highly doubtful that any of these Med. Mari. products we are seeing have THC that was synthesized. This would be completely impractical. We are most likely seeing naturally occurring THC extracted from the plant!

Scott A. Penabaker

Forensic Scientist
Forensic Science Division
Michigan State Police
Northville Laboratory
42145 W. Seven Mile Rd.
Northville, MI 48167
TX: 248-380-1011
Fax: 248-380-1005

"A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"

Exhibit D

Gormley, Elizabeth (MSP)

From: Knoll, Derek (MSP)
Sent: Thursday, July 25, 2013 4:34 PM
To: Gierlowski, Anne (MSP); Gormley, Elizabeth (MSP); Grabowski, Stephanie (MSP); Tenglin, Lauren (MSP); Zebrowski, Kimberly (MSP)
Subject: FW: People v. Carruthers, No. 309987, decided July 11, 2013 (Michigan Court of Appeals)(Published)
Attachments: People v. Carruthers, July 11, 2013, Mich. App..OPN.PDF

-----Original Message-----

From: Morden, Charles (MSP)
Sent: Thursday, July 25, 2013 4:03 PM
To: Knoll, Derek (MSP)
Subject: FW: People v. Carruthers, No. 309987, decided July 11, 2013 (Michigan Court of Appeals)(Published)

-----Original Message-----

From: Michaud, Gregoire (MSP)
Sent: Thursday, July 25, 2013 4:02 PM
To: Hoskins, Kyle (MSP); Daniels, Gary (MSP); Larrison, Ryan M. (MSP); Marler, Scott (MSP); Morden, Charles (MSP); Pierson, James (MSP); Swander, Constance (MSP); Switalski, Jurgen D. (MSP); Welch, Jason J. (MSP); Wilson, Suzanne (MSP)
Cc: Bowen, John (MSP)
Subject: FW: People v. Carruthers, No. 309987, decided July 11, 2013 (Michigan Court of Appeals)(Published)

LDs,

Please pass along to your respective staffs.

In my meeting with PAAM today, it was decided that any questions regarding law interpretation (e.g., recent controlled substance cases) will be directed thru the applicable Technical Leader who will then reach out to Mr. Ken Stecker for a proper interpretation. The TL then in turn will send an email out to all the LDs with PAAM's response.

Thanks
Greg

Capt. Gregoire P. Michaud
Director
Forensic Science Division
Michigan State Police
7320 N. Canal Rd
Lansing, MI 48913
Office: (517)322-6155
Mobile: (517)927-4071

“A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY”

From: Stecker, Ken (AG)
Sent: Thursday, July 25, 2013 3:03 PM
To: Michaud, Gregoire (MSP)
Cc: 'KC Steckelberg'
Subject: People v. Carruthers, No. 309987, decided July 11, 2013 (Michigan Court of Appeals)(Published)

Greg,

Per our conversation today, please find a summary and attached the Carruthers' case for your review. This case is a good case for your lab personnel. Ken Good Morning,

Please find attached the published Michigan Court of Appeals decision of People v. Carruthers, No. 309987, decided July 11, 2013, for your review. The jury returned a guilty verdict to the charge of possession with intent to deliver the controlled substance marijuana.

The Michigan Court of Appeals, as an issue of first impression, that under existing statutory scheme, whether an edible containing THC extract from marijuana resin is or is not "usable marihuana" under the Michigan Medical Marihuana Act (MMMA).

Defendant was charged with possession of marijuana found in various locations within the vehicle, including mason jars, plastic bags, and a binder of plastic pouches, as well as containers of brownies that were individually labeled to indicate the weight of the brownie and content of medical marijuana (e.g., brownie weighing 3.1 ounces and containing two grams of medical marijuana). Testimony from a prosecution expert indicated that 9.1 ounces of usable marijuana (separate from the baked goods) was found, as well as 54.9 ounces of the brownies containing THC. At his preliminary examination, defendant acknowledged that THC was extracted from marijuana and infused into the brownies.

The Court held "that edibles made with THC extracted from marijuana resin are not "usable marihuana" under the MMMA. Simply put, the evidence before this Court indicates that the brownies were not a "mixture or preparation" of "dried leaves and flowers of the marihuana plant." MCL 333.26423(k). Therefore, the brownies were not "usable marihuana" under the MMMA, and none of the weight of the brownies should have been counted towards the determination of whether defendant possessed over 12.5 ounces of usable marijuana."

The Court further held that "therefore, defendant was in possession of an "amount of marihuana" that exceeded the permitted amount of usable marijuana he may have been allowed to possess. By possessing edibles that were not "usable marihuana" under the MMMA, but that indisputably were "marihuana," he failed to meet the requirements for section 4 immunity."

However, because the state of the law changed during the pendency of defendant's appeal, the defendant was entitled to move the trial court for dismissal and an evidentiary hearing on his ability to assert an affirmative defense under section 8 of the MMMA.

Exhibit E

Gormley, Elizabeth (MSP)

From: Knoll, Derek (MSP)
Sent: Thursday, February 06, 2014 8:34 AM
To: Gierlowski, Anne (MSP); Gormley, Elizabeth (MSP); Grabowski, Stephanie (MSP); Tenglin, Lauren (MSP); Zebrowski, Kimberly (MSP)
Subject: FW: People v. Carruthers, No. 309987, decided July 11, 2013 (Michigan Court of Appeals)(Published)
Attachments: People v. Carruthers, July 11, 2013, Mich. App..OPN.PDF

See below for clarification on THC and plant material. Let me know if you have questions.

-----Original Message-----

From: Hoskins, Kyle (MSP)
Sent: Thursday, February 06, 2014 8:25 AM
To: Blaksmith, Zachary (MSP); Kidd, Anne (MSP); Choate, Bradley (MSP); Knoll, Derek (MSP); Chirackal, George (MSP); Gooden, Dale (MSP)
Cc: Marier, Scott (MSP); Michaud, Gregoire (MSP); Bowen, John (MSP); Daniels, Gary (MSP); Hall, Glen (MSP); Larrison, Ryan M. (MSP); Morden, Charles (MSP); Pierson, James (MSP); Swander, Constance (MSP); Welch, Jason J. (MSP)
Subject: FW: People v. Carruthers, No. 309987, decided July 11, 2013 (Michigan Court of Appeals)(Published)

A reviewer from the Lansing Lab requested my interpretation of another analyst's report on a food product on 2/4/14. The examiner's result was marihuana when no visible plant material was found.

I spoke to the laboratory analyst yesterday and was told that the communication below was not forwarded to them directly and that they had no knowledge of the directive to discontinue this practice.

Individuals that continue to have no visualization of any plant material in products should be identifying the active ingredient in that product. Examiners that continue this practice have no knowledge of how these products may have actually been produced unless they have watched the production personally. (d) section of 333.7217 has been clarified by Ken Stecker.

-----Original Message-----

From: Hoskins, Kyle (MSP)
Sent: Friday, December 13, 2013 2:20 PM
To: Daniels, Gary (MSP); Larrison, Ryan M. (MSP); Morden, Charles (MSP); Pierson, James (MSP); Swander, Constance (MSP); Switalski, Jurgen D. (MSP); Welch, Jason J. (MSP)
Cc: Michaud, Gregoire (MSP) (MichaudG@michigan.gov); Bowen, John (MSP); Marier, Scott (MSP)
Subject: FW: People v. Carruthers, No. 309987, decided July 11, 2013 (Michigan Court of Appeals)(Published)

A concern came out of the Lansing Laboratory (please, see communication log of case LS13-885) regarding interpretation of a portion of the Public Health Code 333.7217:

"(d) Synthetic equivalents of the substances contained in the plant, or in the resinous extractives of cannabis and synthetic substances, derivatives, and their isomers with similar chemical structure or pharmacological activity, or both, such as the following, are included in schedule 1:

(i) Δ^1 cis or trans tetrahydrocannabinol, and their optical isomers.

(ii) Δ^6 cis or trans tetrahydrocannabinol, and their optical isomers.

(iii) Δ³,4, cis or trans tetrahydrocannabinol, and their optical isomers."

In my opinion, the examiner identified the substance correctly as she could not visualize any actual plant material in case LS13-885. There seems to be a debate going on with some examiners whether it is the laboratory's responsibility to determine whether the THC found is natural or synthetic. The other concern expressed is that the charge changes to a felony with the identification of THC.

I requested Ken Stecker's opinion his e mail response is :

" Hi Kyle,

That is my opinion, THC is a schedule 1 drug regardless of where it comes from. I hope that helps. Ken"

Examiner's that are identifying food products or other non-plant materials as marihuana without the visualization of any plant material should discontinue this practice. The final identification of all phases of testing can only be marihuana when plant fragments, portions, samples, plant hairs or actual plants are visualized by the scientist. To my knowledge, the only two laboratories that have expressed this concern are Northville and Lansing. This is not the opinion of every examiner at those two laboratories.

-----Original Message-----

From: Michaud, Gregoire (MSP)

Sent: Thursday, July 25, 2013 4:02 PM

To: Hoskins, Kyle (MSP); Daniels, Gary (MSP); Larrison, Ryan M. (MSP); Marier, Scott (MSP); Morden, Charles (MSP); Pierson, James (MSP); Swander, Constance (MSP); Switalski, Jurgen D. (MSP); Welch, Jason J. (MSP); Wilson, Suzanne (MSP)

Cc: Bowen, John (MSP)

Subject: FW: People v. Carruthers, No. 309987, decided July 11, 2013 (Michigan Court of Appeals)(Published)

LDs,

Please pass along to your respective staffs.

In my meeting with PAAM today, it was decided that any questions regarding law interpretation (e.g., recent controlled substance cases) will be directed thru the applicable Technical Leader who will then reach out to Mr. Ken Stecker for a proper interpretation. The TL then in turn will send an email out to all the LDs with PAAM's response.

Thanks

Greg

Capt. Gregoire P. Michaud

Director

Forensic Science Division

Michigan State Police

7320 N. Canal Rd

Lansing, MI 48913

Office: (517)322-6155

Mobile: (517)927-4071

"A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"

From: Stecker, Ken (AG)
Sent: Thursday, July 25, 2013 3:03 PM
To: Michaud, Gregoire (MSP)
Cc: 'KC Steckelberg'
Subject: People v. Carruthers, No. 309987, decided July 11, 2013 (Michigan Court of Appeals)(Published)

Greg,

Per our conversation today, please find a summary and attached the Carruthers' case for your review. This case is a good case for your lab personnel. Ken Good Morning,

Please find attached the published Michigan Court of Appeals decision of People v. Carruthers, No. 309987, decided July 11, 2013, for your review. The jury returned a guilty verdict to the charge of possession with intent to deliver the controlled substance marijuana.

The Michigan Court of Appeals, as an issue of first impression, that under existing statutory scheme, whether an edible containing THC extract from marijuana resin is or is not "usable marihuana" under the Michigan Medical Marihuana Act (MMMA).

Defendant was charged with possession of marijuana found in various locations within the vehicle, including mason jars, plastic bags, and a binder of plastic pouches, as well as containers of brownies that were individually labeled to indicate the weight of the brownie and content of medical marijuana (e.g., brownie weighing 3.1 ounces and containing two grams of medical marijuana). Testimony from a prosecution expert indicated that 9.1 ounces of usable marijuana (separate from the baked goods) was found, as well as 54.9 ounces of the brownies containing THC. At his preliminary examination, defendant acknowledged that THC was extracted from marijuana and infused into the brownies.

The Court held "that edibles made with THC extracted from marijuana resin are not "usable marihuana" under the MMMA. Simply put, the evidence before this Court indicates that the brownies were not a "mixture or preparation" of "dried leaves and flowers of the marihuana plant." MCL 333.26423(k). Therefore, the brownies were not "usable marihuana" under the MMMA, and none of the weight of the brownies should have been counted towards the determination of whether defendant possessed over 12.5 ounces of usable marijuana."

The Court further held that "therefore, defendant was in possession of an "amount of marihuana" that exceeded the permitted amount of usable marijuana he may have been allowed to possess. By possessing edibles that were not "usable marihuana" under the MMMA, but that indisputably were "marihuana," he failed to meet the requirements for section 4 immunity."

However, because the state of the law changed during the pendency of defendant's appeal, the defendant was entitled to move the trial court for dismissal and an evidentiary hearing on his ability to assert an affirmative defense under section 8 of the MMMA.

Exhibit F

Gormley, Elizabeth (MSP)

From: Choate, Bradley (MSP)
Sent: Monday, August 10, 2015 11:03 AM
To: Gormley, Elizabeth (MSP)
Subject: FW: Casework Guidelines

From: Hoskins, Kyle (MSP)
Sent: Friday, February 14, 2014 6:16 PM
To: Choate, Bradley (MSP)
Cc: Daniels, Gary (MSP); Bowen, John (MSP)
Subject: Re: Casework Guidelines

I'd like to keep moving, let's continue working on the wording as a team via email. This effects all 7 labs, all six supervisors are sending minor changes to the first draft. Lansing has held the strongest opinion of keeping the conclusion as marihuana. The remaining are ok reporting THC. Please, send me some thoughts of a possible additional statement of how this was the conclusion based on results/data that was derived. Also, what are your thoughts of how many cannabinoids need to be shown, should they be identified vs only GC MS observation? Swgdrug does have direct comments on this topic that you may want to review if you haven't already. I've already sent your comments on to the other supervisors so that they understand Lansing's concerns. Send me some thoughts next week and we can keep this rolling.

F/S Kyle Ann Hoskins
Technical Leader Controlled Substances
Bridgeport Laboratory
6296 Dixie Hwy.
Bridgeport, MI 48722
(989)777-9300

On Feb 14, 2014, at 4:28 PM, "Choate, Bradley (MSP)" <ChoateB@michigan.gov> wrote:

That is why Inspector Bowen would like us to get together when you get back in March. We can set up a time then?

Brad

From: Hoskins, Kyle (MSP)
Sent: Friday, February 14, 2014 3:06 PM
To: Choate, Bradley (MSP)
Cc: Daniels, Gary (MSP); Bowen, John (MSP); Rosenthal, Jeffrey (MSP)
Subject: RE: Casework Guidelines

Brad,

I've understood the argument between the two sides. What I need help on is a solution that all can live with the interpretation of the report. Having a similar beginning product and different end conclusion from lab to lab isn't going to work even though we have been doing it for 19 years.

What about an additional statement attached to the report to actually educate our reader what identifying the THC and any other cannabinoid actually means?

Kyle

From: Choate, Bradley (MSP)
Sent: Friday, February 14, 2014 2:24 PM
To: Hoskins, Kyle (MSP)
Cc: Daniels, Gary (MSP); Bowen, John (MSP)
Subject: RE: Casework Guidelines

I disagree with the changes being made for a few reasons:

The Controlled Substances Procedure Manual specifically states that Marihuana is a special case and was written that way due to the Michigan statutory definition of Marihuana. Nowhere does it say that THC is a special case.

Oils and solids where no plant material is present is included here because it represents resins extracted from the Marihuana plant which is controlled as Marihuana by statute.

When THC is identified in a case the analysts has two choices:

- 1) Identify it as Marihuana which for possession is a Schedule I misdemeanor
- 2) Identify it as a synthetic equivalent of THC which for possession is a Schedule I felony.

There is not a third choice. The question then becomes is the THC from a natural source i.e., Marihuana, or a synthetic source. The presence of other cannabinoids indicates that the substance is from a natural source. I don't know of any way to determine that THC was synthesized unless a lab was found and the pre cursor substances to make THC were present.

Prosecutor's rely on our reports to determine what to charge a person with. A report that states delta-1-THC without any other statement would lead a Prosecutor to the synthetic portion of the law since this is the only place where THC is specifically listed. This could lead to the wrong charge of possession of synthetic THC and the ultimate wrongful conviction of an individual. For the laboratory to contribute to this possible miscarriage of justice would be a huge black eye for the Division and the Department.

We are Forensic Scientists which means that we have to apply science to the law. It is our responsibility to learn and interpret the law in regards to Controlled Substances. We do this with every report we issue since we determine whether a substance is controlled and then list what schedule it is in. We don't leave it up to the prosecutor to figure this out, otherwise, we would just identify the compound and not say if it is controlled or not.

In the case *People v Carruthers* case that was heard by the State of Michigan Court of Appeals where THC was identified in brownies with testimony from the analyst that no plant material was present it was stated by the court that "The parties agree, however, as do we, that the brownies did constitute "marihuana" under its statutory definition. Possession of THC extracted from marijuana is possession of marijuana. See *People v Campbell...*"

Food cases that have extracted resins from marihuana in them but no visible plant material should still be charged as possession of marihuana. I have a problem with the procedure manual stating that a conclusion of marihuana cannot be stated in the report. It would follow then, that we could not state on the stand that it is marihuana which would make it hard, if not impossible for the Prosecutor to prove possession of marihuana. This conclusion is incorrect because the resins are Marihuana. Apparently analysts in our system our hung up on the fact that to identify marihuana they need to see plant material. The concept that they are missing is that the resins are part of marihuana and can be

conclusively identified. We are not making an identification of marijuana in most cases because of a botanical analysis. We are relying on the Duquenois Levine test coupled with the presence of cystolithic hairs. With resins, the presence of THC and other cannabinoids replaces the identification of the cystolithic hairs.

Finally, if THC is identified in the results the Duquenois Levine test does not satisfy the selective test. It is an accepted test for the identification of marijuana but it is not selective for just one cannabinoid. For all other controlled substances tested the only selective tests listed in our Procedure Manual are GC, TLC, LC, Crystal and physical recognition of marked pharmaceutical products. One of these would be necessary for a complete analysis.

I will also forward Mr. Rosenthals feedback.

Bradley D. Choate
Controlled Substances Unit Supervisor-Lansing Laboratory
Forensic Science Division
Michigan State Police
7320 N. Canal Road
Lansing, MI 48913
TX: 517- 819-2999

"A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"

From: Hoskins, Kyle (MSP)
Sent: Tuesday, February 11, 2014 9:21 AM
To: Kidd, Anne (MSP); Choate, Bradley (MSP); Knoll, Derek (MSP); Chirackal, George (MSP); Gooden, Dale (MSP)
Subject: Casework Guidelines

Good Morning,

The procedure manual for guidelines of marijuana will be changed to conform with the conclusion of cannabinoids to be used as a result when no visible morphological characteristics of plant material can be microscopically visualized.

This change is being put in place so that our reporting is uniform across the state in regards to oils, food products and other substances that are not grossly plant.

Please, read the attached and offer any thoughts or concerns of the policy. I'd appreciate a response by Friday, February 14th.

Thank you,

Kyle Ann Hoskins
Technical Leader Controlled Substances
Forensic Science Division
Michigan State Police

6296 Dixie Hwy
Bridgeport, MI 48722
TX (989)777-9300

"A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"

Exhibit G

Gormley, Elizabeth (MSP)

From: Choate, Bradley (MSP)
Sent: Monday, August 10, 2015 11:04 AM
To: Gormley, Elizabeth (MSP)
Subject: FW:

-----Original Message-----

From: Hoskins, Kyle (MSP)
Sent: Friday, February 21, 2014 10:42 AM
To: Chirackal, George (MSP); Choate, Bradley (MSP); Gooden, Dale (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP)
Cc: Bowen, John (MSP); Daniels, Gary (MSP)
Subject:

Good Morning,

I have been thinking more of changing the identification criteria for the marihuana 2.1 section. For those that want to identify the extracts of marihuana in food products without visible plant material, which components do you feel would be required? Would identifying THC alone be enough or a combination of THC, CBN and/or CBD? A possibility to clarify results would be to show the components identified (THC, CBD and/or CBN) in the results section and an additional statement such as "The following components were identified (THC, CBN and/or CBD). These cannabinoids are most frequently found in marihuana, Schedule 1." Those that prefer to identify THC should identify that component using GC MS and GC with the results remaining THC.

Please, forward any thoughts or concerns. As a group of about 40, we will not agree on the interpretation of MI law and apparently Stecker's interpretation doesn't encompass all of the concerns. I do think we can develop criteria in our procedure that will clarify the results.

Please, reply to all so that everyone can see your comments.

Thanks,

F/S Kyle Ann Hoskins
Technical Leader Controlled Substances
Bridgeport Laboratory
6296 Dixie Hwy.
Bridgeport, MI 48722
(989)777-9300

Exhibit H

Gormley, Elizabeth (MSP)

From: Chirackal, George (MSP)
Sent: Wednesday, February 26, 2014 4:43 PM
To: Knoll, Derek (MSP); Gooden, Dale (MSP); Hoskins, Kyle (MSP); Choate, Bradley (MSP); Kidd, Anne (MSP)
Cc: Bowen, John (MSP); Daniels, Gary (MSP)
Subject: RE: food product wording

Northville has been including the additional statement as Dale suggested, when THC is identified. This is relevant due to the unique wording of the tetrahydrocannabinols in our law where only 'synthetic equivalents' are mentioned.

For reporting extract/resins of marihuana, I agree with identifying THC and another cannabinoid other than CBN. I (personally) do not think there should be any additional info in the report as to what components were identified, all info can be included in the worksheet.

If we are going back to the discussion of whether the reporting should be THC or the resins/extracts of marihuana, majority in Northville prefer the resins/extracts of marihuana. Is morphology necessary to identify the resin/extract? If hash/or hash oil is prepared perfectly there will not be any hairs and we should resort to other methods to identify. (Note: We have been following the guideline – No morphology, report THC with additional statement)

Hi Kyle: (unrelated question)

The admincode you sent on 1/10/14 with updated rules do not have (I do not see???) Salvinorin A . (Khat and Salvia divinorum is also missing). Was it supposed to contain everything controlled to-date? I do not see it on the following link also. http://www7.dleg.state.mi.us/orr/Files%5CAdminCode%5C1103_2012-096LR_AdminCode.pdf

George

From: Knoll, Derek (MSP)
Sent: Wednesday, February 26, 2014 12:28 PM
To: Gooden, Dale (MSP); Hoskins, Kyle (MSP); Choate, Bradley (MSP); Kidd, Anne (MSP); Chirackal, George (MSP)
Cc: Bowen, John (MSP); Daniels, Gary (MSP)
Subject: RE: food product wording

I normally identify THC and would be fine with an additional statement similar to Dale's suggestion.

From: Gooden, Dale (MSP)
Sent: Wednesday, February 26, 2014 11:50 AM
To: Hoskins, Kyle (MSP); Choate, Bradley (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP); Chirackal, George (MSP)
Cc: Bowen, John (MSP); Daniels, Gary (MSP)
Subject: RE: food product wording

Good morning, Kyle and all,

Perhaps the easiest way to deal with this divisive issue is to simply add a clarifying statement to the lab report, something on the order of "The origin of the delta-1-THC, whether from a plant extract or a synthetic source, could not be determined." This would put the decision of how to sentence the convicted in the hands of the court, where it belongs, and would indirectly inform them that there is a decision for them to make in this regard. Lately, the majority of medibles cases that I have done have had only a THC peak, so the proposal from Elizabeth would not be helpful at addressing the concerns of the Lansing analysts. I understand their position that by reporting THC instead of marihuana, we are possibly influencing the sentencing severity, as THC has a significantly higher penalty than marihuana. Ethically, we need to remain as neutral in this issue as possible. The above suggested disclaimer would allow us to report out what we actually identified, the THC, without the implication that it was not of marihuana origin.

Dale

Dale A. Gooden
Forensic Scientist Manager
Forensic Science Division
Michigan State Police
720 Fuller Avenue, N.E.
Grand Rapids, MI 49503
Office phone: 616-242-6657
Fax: 616-242-6682

"A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"

From: Hoskins, Kyle (MSP)
Sent: Wednesday, February 26, 2014 11:21 AM
To: Choate, Bradley (MSP); Gooden, Dale (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP); Chirackal, George (MSP)
Cc: Bowen, John (MSP); Daniels, Gary (MSP)
Subject: Fwd: food product wording

Any other thoughts?

F/S Kyle Ann Hoskins
Technical Leader Controlled Substances
Bridgeport Laboratory
6296 Dixie Hwy.
Bridgeport, MI 48722
(989)777-9300

Begin forwarded message:

From: "Knoll, Derek (MSP)" <KnollD@michigan.gov>
Date: February 26, 2014 at 6:15:22 AM PST
To: "Hoskins, Kyle (MSP)" <HoskinsK@michigan.gov>
Subject: FW: food product wording

Here are some thoughts. I agree especially with point one, that if we are going to identify marihuana without plant material additional identifications would be necessary.

-----Original Message-----

From: Gormley, Elizabeth (MSP)

Sent: Monday, February 24, 2014 11:37 AM

To: Knoll, Derek (MSP)

Subject: RE: food product wording

Analysis/Reporting:

1. The biogenetic pathway of cannabinoids in marijuana begins with cannabigerol (CBG) and includes cannabichromene (CBC) along with the CBD, THC, and CBN mentioned in the original e-mail. If an analytical requirement is to be established, I would think it appropriate to require identification of at least three cannabinoids, one of which shall be THC, and two of CBC, CBD, CBN or CBG. Given that CBN is a result of the oxidation of THC, the identification of THC and CBN, by themselves and in the absence of plant material, only really supports the presence of THC, not the biogenetic pathway of the plant, which is what an analyst is using to infer "plant" from all these compounds.

2. If a report is to include inferences relating particular cannabinoids to the marijuana plant, then it would be prudent to leave off any semi-quantitative statements such as "most frequently". This statement has quantitative implications which may or may not be well-founded, but also has implications that these cannabinoids can "less frequently" be found in other plants (...the cacao tree used to make the chocolate for the brownie?).

Devil's Advocate:

3. Similarly, are we interested in inferring the speciation of the plant from which a salvinorin A food product came from? Would we report "the salvinorin A is inferred to have arisen in the brownie by adding *Salvia divinorum* to said baked good"??

4. If no plant material is visualized, can we know if it was marijuana or an extracted oil that was used to prepare the product? Does that matter in formulating a statement for the report? What is the qualitative uncertainty regarding the immediate source of the cannabinoids in question?

~ Elizabeth

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Exhibit I

Gormley, Elizabeth (MSP)

From: Gormley, Elizabeth (MSP)
Sent: Thursday, August 06, 2015 2:25 PM
To: Choate, Bradley (MSP); Chirackal, George (MSP); Gooden, Dale (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP); Orlowski, Sandra (MSP); Waldron, Jerome (MSP); Dougherty, Elaine (MSP); Blaksmith, Zachary (MSP); Daniels, Gary (MSP); Michaud, Gregoire (MSP)
Subject: FOIA - THC foodstuffs & THC statement

Follow Up Flag: Follow up
Due By: Tuesday, August 11, 2015 9:00 AM
Flag Status: Flagged

All:

I have received a FOI request for any and all e-mails on the topic of procedures for handling THC in non-plant material and the addition of the phrase ("origin unknown") to lab reports. That includes the e-mail chain below, to which you were a party.

I am e-mailing you to ensure that any additional side e-mail conversations on this procedure are disclosed.

The request is for communications from 2008 on, but the specific interest is in an e-mail on this topic which may have been issued in July 2013 or later.

If you have any additional e-mails of conversations related to this procedure or are aware of the e-mail in question, please forward each to me no later than Tuesday, August 11th, but preferably as soon as possible.

Thank you!
Elizabeth

—Original Message—

From: Bowen, John (MSP)
Sent: Saturday, March 15, 2014 5:57 PM
To: Hoskins, Kyle (MSP)
Cc: Choate, Bradley (MSP); Chirackal, George (MSP); Gooden, Dale (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP); Orlowski, Sandra (MSP); Waldron, Jerome (MSP); Dougherty, Elaine (MSP); Blaksmith, Zachary (MSP); Bell, Jessica (MSP); Daniels, Gary (MSP); Michaud, Gregoire (MSP)
Subject: Re: THC foodstuffs

I do not intend to bring Ken Stecker in to explain this to our drug unit; I think everyone understands the issue pretty clearly.

I've had this conversation personally with Brad, Kyle, and George. All three agree with the (sensible) argument that other cannabinoids *can* be manufactured synthetically, just as THC can be. Is it likely that someone went to the trouble to manufacture THC and two other cannabinoids, mix them up, and bake them into a pan of brownies? Of course not. That doesn't mean we should change the results to show we found Marijuana. We didn't, because Marijuana is a plant, and we didn't find plant parts.

We need to make sure our reports are accurate. To me, that means reporting *exactly* what we found. If we found THC, with no other plant parts, we should report it as THC, not Marijuana. If there are plant parts consistent with Marijuana available in combination with the THC, that sounds like Marijuana.

It makes sense to clarify the detection of THC with a disclaimer that we don't know the source (natural/synthetic). That should eliminate any fear that a high school student with a brownie could be charged with a felony.

Kyle, please make the changes to the procedures manual and pin down the wording for the disclaimer statement. Once that's done, I'll talk to Ken Stecker myself and make sure he's ok with this direction.

JB

> On Mar 14, 2014, at 6:27 PM, "Hoskins, Kyle (MSP)" <HoskinsK@michigan.gov> wrote:

>
> If Ken Stecker's opinion needs to be heard vs e mail, perhaps Division can provide him to discuss his opinion on the THC topic of the law to anyone that would like to discuss/debate the law.
>
> Unfortunately, other cannabinoids can be made synthetically so that does not clear up when these are present we can assume that the only source is marihuana. When I asked the group which cannabinoids do we have to have to identify a substance as marihuana, all agreed this is not a workable solution. No one could truly defend which ones have to be present to confirm marihuana. What if both are used synthetic and natural cannabinoids when making these products?

>
> The House Bill issue will have to be crossed if passed into law. My answer if asked if this was marihuana as a chemist, "I identified THC and certainly THC can be extracted from marihuana".

>
> We really need to work on the clarification of these reports verses coming up with all kinds of "what if" scenerios. If the disclaimer statement that was suggested isn't how you'd clarify the report create something better. THC (marihuana) on the results line suggests these two are the same and I don't think it clarifies the reports.

>
> Have a great weekend all.

>
>
> F/S Kyle Ann Hoskins
> Forensic Scientist
> Bridgeport Laboratory
> 6296 Dixie Hwy.
> Bridgeport, MI 48722
> (989)777-9300

>
>> On Mar 14, 2014, at 5:01 PM, "Choate, Bradley (MSP)" <ChoateB@michigan.gov> wrote:

>>
>> I have issues with a couple of statements in this email.

>>
>> 1) According to the e-mail I saw, Ken Stecker stated "That is my opinion, THC is a schedule 1 drug regardless of where it comes from. I hope that helps. Ken". This is not the same as saying that the law doesn't differentiate between natural and synthetic THC.

>>
>> 2) The presence of other cannabinoids indicates a natural source when plant material is not present.

>>
>> Also, I have attached House Bill 5104 which amends the medical marihuana act for "marihuana-infused product". How will these cases be affected by this and how are people going to answer the question "is this Marihuana?" while testifying, which is a question I would expect when the charge is marihuana.

>>
>>
>> Bradley D. Choate
>> Controlled Substances Unit Supervisor-Lansing Laboratory Forensic

>> Science Division Michigan State Police
>> 7320 N. Canal Road
>> Lansing, MI 48913
>> TX: 517- 819-2999

>>
>> "A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"
>>
>>
>>

>> -----Original Message-----

>> From: Hoskins, Kyle (MSP)
>> Sent: Wednesday, March 12, 2014 6:38 AM
>> To: Choate, Bradley (MSP); Chirackal, George (MSP); Gooden, Dale
>> (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP); Orłowski, Sandra (MSP);
>> Waldron, Jerome (MSP); Dougherty, Elaine (MSP); Blaksmith, Zachary
>> (MSP); Bell, Jessica (MSP)
>> Cc: Bowen, John (MSP)
>> Subject: THC foodstuffs

>>
>> Based on our discussions on THC/marihuana found in foodstuffs, I contacted Dr Endres to determine in the chemical industry the process of synthesizing THC. According to Endres, many manufacturers do synthesize their own THC standards as it is easier than purifying a standard from marihuana to a specific isomer of THC which is the typical request of the customer. He indicated synthesis is difficult, but the purification process is also arduous.

>>
>> The THC found in foodstuffs although most likely the extract of marihuana cannot be determined by our examiners without the presence of any plant material morphology. Identification of THC shall be made on these products which shall include a specific test and a selective test. The result section of the report shall indicate THC. All reports shall include a disclaimer statement in our inability to determine the possible source of the THC so that the reports are clear and that our readers are educated on this fact.

>>
>> Remember according to Stecker our law does not distinguish the fact whether THC is a natural and/or a synthetic source.

>>
>> One example of a disclaimer statement is the following:

>>
>> "The origin of the delta 9 THC identified whether from plant (marihuana) or a synthetic source can not be determined by this laboratory."

>>
>> If your examiners would like to use another disclaimer statement in their report that is their option, but it will need to be in each of these reports to avoid any confusion to the reader.

>>
>> I'll make changes to the procedure manual next week to solidify these slight changes in our protocol.

>>
>> F/S Kyle Ann Hoskins
>> Technical Leader Controlled Substances Bridgeport Laboratory
>> 6296 Dixie Hwy.
>> Bridgeport, MI 48722
>> (989)777-9300
>> <2013-HEBH-5104.pdf>

Exhibit J

Gormley, Elizabeth (MSP)

From: Knoll, Derek (MSP)
Sent: Thursday, October 09, 2014 10:16 AM
To: Gierlowski, Anne (MSP); Gormley, Elizabeth (MSP); Grabowski, Stephanie (MSP); Tenglin, Lauren (MSP); Zebrowski, Kimberly (MSP)
Subject: St. Clair Co.

I spoke to Melissa Keys recently and we discussed the cases involving THC butter/wax etc. cases. If you have a possession type case of a bag of plant material and a container of wax, then we only need to do the plant material. There could be circumstances that the THC is more relevant, such as numerous items or larger weights where distribution could be an issue. I don't think we are seeing a lot of those types, but we may need to do the THC or contact the agency/prosecutor to see what they are charging.

Let me know if there are questions.

Derek

Exhibit K

Gormley, Elizabeth (MSP)

From: Dougherty, Elaine (MSP)
Sent: Thursday, January 29, 2015 7:38 AM
To: Gooden, Dale (MSP); Gormley, Elizabeth (MSP); Choate, Bradley (MSP); Hoskins, Kyle (MSP); Blaksmith, Zachary (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP); Chirackal, George (MSP)
Cc: Bowen, John (MSP); Pierson, James (MSP); Daniels, Gary (MSP)
Subject: RE: Concern from the field

What if we adopted the Federal definitions below for hash and hash oil, and then reported these out as "marihuana processed as hash" and "...hash oil?"

Hashish, for the purposes of this guideline, means a resinous substance of cannabis that includes (i) one or more of the tetrahydrocannabinols (as listed in 21 C.F.R. § 1308.11(d)(30)), (ii) at least two of the following: cannabiniol, cannabidiol, or cannabichromene, and (iii) fragments of plant material (such as cystolith fibers).

Hashish oil, for the purposes of this guideline, means a preparation of the soluble cannabinoids derived from cannabis that includes (i) one or more of the tetrahydrocannabinols (as listed in 21 C.F.R. § 1308.11(d)(30)), (ii) at least two of the following: cannabiniol, cannabidiol, or cannabichromene, and (iii) is essentially free of plant material (e.g., plant fragments). Typically, hashish oil is a viscous, dark colored oil, but it can vary from a dry resin to a colorless liquid.

I realize this would necessitate changes to the procedure manual, but I don't think these marihuana products are going to go away... I think for food products, we would still need to identify THC, unless obvious plant material pieces are visible.

My two cents,
Elaine

From: Gooden, Dale (MSP)
Sent: Wednesday, January 28, 2015 4:36 PM
To: Gormley, Elizabeth (MSP); Choate, Bradley (MSP); Hoskins, Kyle (MSP); Blaksmith, Zachary (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP); Dougherty, Elaine (MSP); Chirackal, George (MSP)
Cc: Bowen, John (MSP); Pierson, James (MSP); Daniels, Gary (MSP)
Subject: RE: Concern from the field

I concur with Elizabeth, with an added observation:

If you have a plant material extract with a few bits of plant material in it, considering the points that Elizabeth cited about what is required to call the substance marihuana, you would be hard pressed to identify the plant material bits as marihuana, even if there are enough morphological features present to microscopically tell that the plant material is marihuana. The problem is that you must also then have a positive Duquenois-Levine test, and how are you going to get that when the plant material bits have been "soaking" in a medium, the plant material extract, which is typically loaded with delta-1-THC and other cannabinoids? How can you run the Duquenois-Levine only on the plant material and be assured that the positive result is from the cannabinoids in the plant material, not from the cannabinoids in the extract? You can't. Therefore, you cannot provide the positive chemical test, whether it be a Duquenois-Levine or a GC-MS, on the plant material alone. The plant material has been "contaminated" by its surrounding medium, the

extract. In cases like this, we really have no choice but to analyze the plant material extract and report what was actually identified, the delta-1-THC.

Dale

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"A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"

From: Gormley, Elizabeth (MSP)
Sent: Wednesday, January 28, 2015 4:14 PM
To: Choate, Bradley (MSP); Hoskins, Kyle (MSP); Blaksmith, Zachary (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP); Dougherty, Elaine (MSP); Chirackal, George (MSP); Gooden, Dale (MSP)
Cc: Bowen, John (MSP); Pierson, James (MSP); Daniels, Gary (MSP)
Subject: RE: Concern from the field

This issue is strictly about the analytical processes required to reach a conclusion of marihuana vs THC. I think perhaps taking a look at how THC wax fits into the procedure manual and the law would solve a majority of the concerns with this type of submission.

Procedure

Let's look at the requirements for marihuana exams:

1. Macroscopic exam: the material is macroscopically consistent with plant material
2. Microscopic exam: the material is microscopically consistent with marihuana (required for ID)
3. Chemical test: a positive reaction for both steps of the D-L test.

If a substance meets all of the above, it can be identified as marihuana.

If it does not meet all three, then either

- a) Another test must be performed to reach an ID of marihuana, OR
- b) It cannot be identified as marihuana

There is no other option.

Additionally, if only part of an inhomogeneous mixture is analyzed, that part which was tested should be specified in the report so as to be as clear as possible. For example: "Plant material residue recovered from the brown sticky material was analyzed."

Law

The part of the law which is relevant to this issue is the definition of marihuana. It is clear that in non-MMMA instances the resin extracted from the plant "Canabis" sativa L. is defined as marihuana. (MMMA: usable marihuana has a different definition not considered here.) Unfortunately, we have no way of ascertaining the species of plant without the morphological tests specified in the procedure manual. Typically waxes and oils have limited macroscopic and microscopic features which are needed for the identification of the plant species, and so THC is the analyte typically identified in cases with insufficient plant morphology.

In the instance of insufficient plant features, the origin of the THC could have been from a plant or a synthetic source: we may have a hunch about where it came from, but we don't know, and we don't have any data to predict the probability of one source over the other. That's what our THC statement says, and for the most part prosecutors have had no issue with the statement appearing on THC reports. Prosecutors reportedly can charge "marihuana" even with a lab report that says "THC", and have done so at their discretion.

I do not favor re-wording the THC statement to resolve this particular problem as the problem does not arise from the statement.

I would instead suggest ensuring that our tests and reports are aligned to provide clear, accurate, and relevant information to our client agencies.

The references below may be of use when considering my position.

Respectfully,
Elizabeth

References:

SWGDRUG Recommendations:

"IIIB.3.2.1 For cannabis, macroscopic and microscopic examinations will be considered as uncorrelated techniques from Category B when observations include documented details of botanical features. Laboratories shall define the acceptance criteria for these features for each examination.

IIIB.3.2.2 For exhibits of cannabis that lack sufficient observable macroscopic and microscopic botanical detail (e.g. extracts or residues), D9-tetrahydrocannabinol (THC) or other cannabinoids shall be identified..."

MSP Procedure Manual

"2.1 Marihuana is a special case and the analytical procedure is:

- Plant material - Macroscopic examination, microscopic examination, and Duquenois Levine or other selective test for cannabinoids. A description of morphological characteristics must be included in the case notes.
- Hashish - Microscopic examination for plant hairs, Duquenois Levine, and a specific test for cannabinoids.
- Oils, solids, or plant material with no identifiable hairs - As a minimum protocol, the analyst shall perform one specific test and a selective test for cannabinoids. A second specific test may be substituted for the selective test. The report shall clarify that the source of the identified cannabinoids cannot be established.

"2.2.2 Multiple Samples (Packages or Plants)

...

- The report shall state the number and/or portions of the case samples that were analyzed.

2.2.3 Multiple Drug Items

...

- Only one item involving a particular drug found on a person or in a particular location will be analyzed.
- In general, the highest penalty item will be analyzed
- In general, the drug present in the highest quantity will be analyzed.

Elizabeth Gormley
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"A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"

From: Choate, Bradley (MSP)
Sent: Wednesday, January 28, 2015 2:21 PM
To: Hoskins, Kyle (MSP); Blaksmith, Zachary (MSP); Gormley, Elizabeth (MSP); Kidd, Anne (MSP); Knoll, Derek (MSP); Dougherty, Elaine (MSP); Chirackal, George (MSP); Gooden, Dale (MSP)
Cc: Bowen, John (MSP); Pierson, James (MSP); Daniels, Gary (MSP)
Subject: RE: Concern from the field

Upon reading this correspondence I immediately thought about the Guiding Principles training we receive yearly. Under Professionalism it states that "Conclusions are based on the evidence and reference material relevant to the evidence, not on extraneous information, political pressure, or other outside influences". Whether or not an individual has a medical marijuana card is immaterial to how we report out our results.

When we made the previous changes I made it very apparent that I did not agree with it. One of my concerns was that by reporting out THC instead of marijuana it would lead to Prosecutors charging people with synthetic THC. This appears to be what the agency wants. The question I would pose to all of our analysts is how they would answer questions on the stand. In the scenario described how would they answer the question that absent the plant material speck, in their opinion is the rest of the wax material marijuana or not and in their opinion is the THC identified synthetic or natural? Again the legal definition of marijuana includes the resinous extract which contains cannabinoids and we can identify those cannabinoids.

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"A PROUD tradition of SERVICE through EXCELLENCE, INTEGRITY, and COURTESY"

From: Hoskins, Kyle (MSP)
Sent: Tuesday, January 27, 2015 9:56 AM
To: Blaksmith, Zachary (MSP); Gormley, Elizabeth (MSP); Kidd, Anne (MSP); Choate, Bradley (MSP); Knoll, Derek (MSP); Dougherty, Elaine (MSP); Chirackal, George (MSP); Gooden, Dale (MSP)
Subject: FW: Concern from the field
Importance: High

Here's what Jim Pierson sent this AM, discussion went up to Division. Suggestion was made to revise those foodstuffs that are reported as marijuana due to visible PM to somehow state that marijuana contains THC. I am assuming most are checking with GC MS anyhow.

Once you see how much stuff we have to discuss in Feb, you'll be glad we started working on this, now.

From: Pierson, James (MSP)
Sent: Tuesday, January 27, 2015 7:13 AM
To: Hoskins, Kyle (MSP); Bowen, John (MSP); Marier, Scott (MSP)
Subject: Concern from the field
Importance: High

Kyle,

When you come Wednesday, I would like to discuss this situation I have been presented with through 6th District. I see their problem. I understand the way the protocol is written our analysts have to report it as MJ but, I definitely can see their point. Hope we can come up with a solution we all can live with....

From Any Fias:

We are encountering a significant amount of THC wax and oil. These products are illegal and not covered under the Michigan Medical Marijuana Act. We have had a couple issues with the lab tests coming back as marijuana instead of delta1-THC. If we were to seized the wax/oil from a card carrying patient or caregiver and it comes back as marijuana, we will not have PC for the arrests. Bill Evans spoke to lab personnel and was advised that if a "speck" of marijuana plant material is found in the oil, the test will come back as marijuana and not delta1-THC. Is there a way to get this changed? Our prosecutors are willing to argue that one speck of marijuana does not turn the larger quantity of oil/wax into marijuana. I can refer you to lab # GR14-3238 where item #4 (brown sticky wax) was tested and found to be marijuana.

Thanks,

Jim

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