



DANIEL L. WHITE
PROSECUTING ATTORNEY
CLAY COUNTY, MISSOURI

Clay County Courthouse, 11 S. Water, Liberty, MO 64068

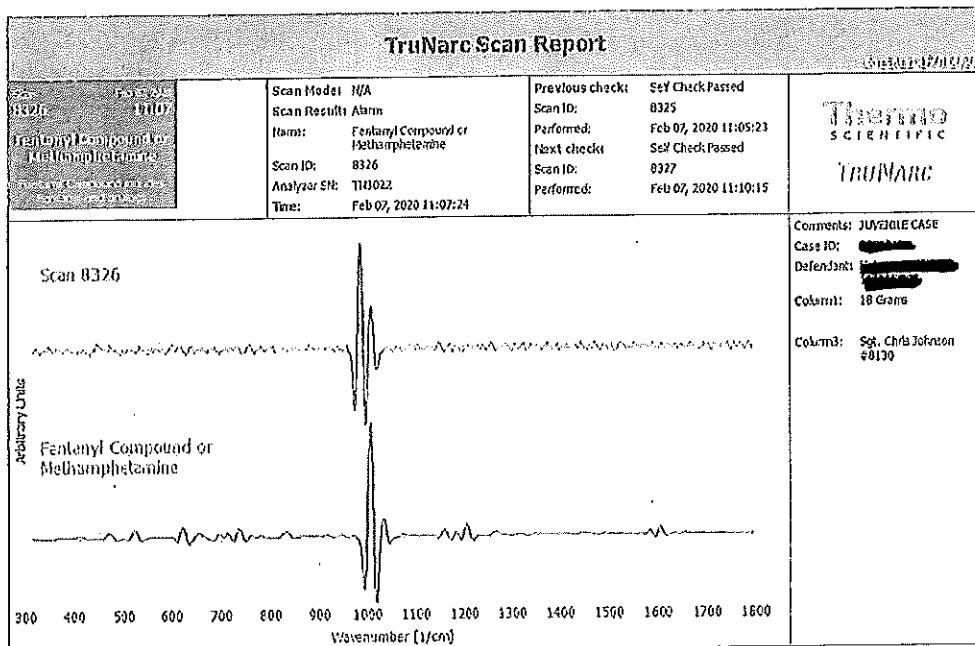
MEMORANDUM

SUBJECT: Disclosure regarding Thermo Fisher Scientific's White Paper "Considerations when scanning for Fentanyl and Methamphetamine" and examples relating thereto

DATE: July 8, 2020

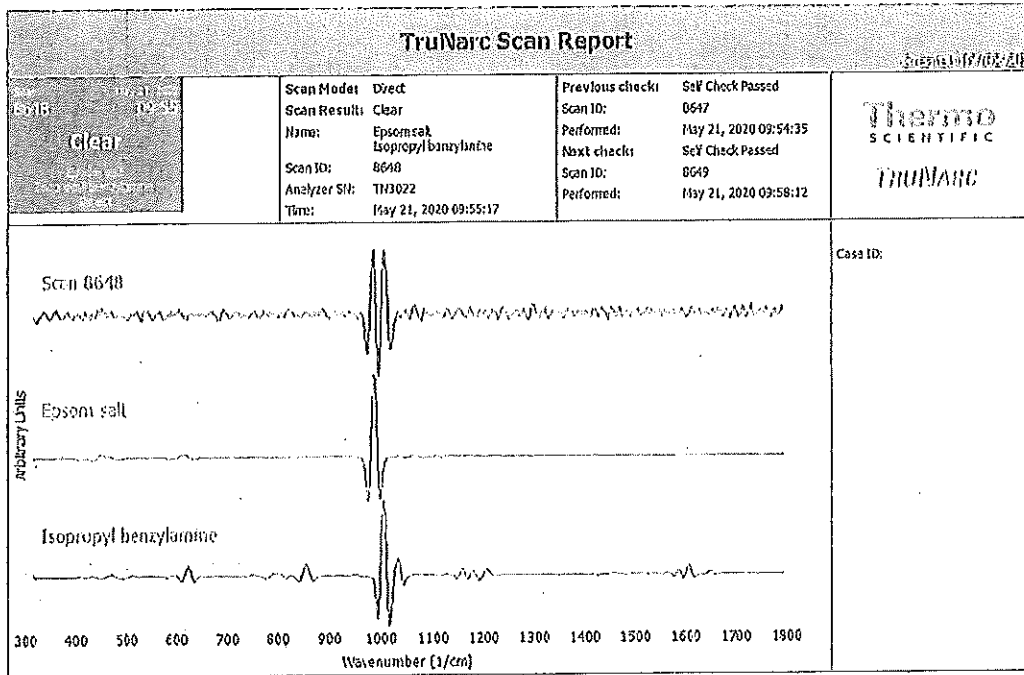
Attached to this memorandum is a two (2) page document provided by Thermo Fisher Scientific titled "Considerations when scanning for Fentanyl and Methamphetamine" (this document is found on page numbers 5-6). This document was provided by Thermo Fisher Scientific, maker of the TruNarc device, at the request of this office based on information obtained from a juvenile case regarding inconsistent TruNarc results.

In that case, a substance was recovered and tested by the TruNarc device. The initial scan yielded the following results:



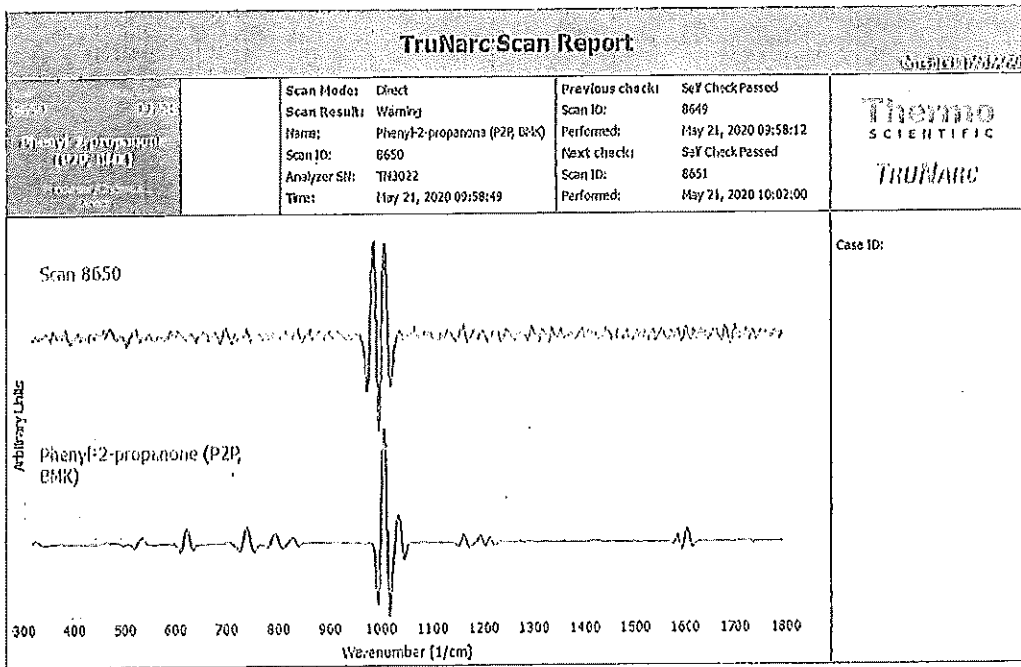
Since the TruNarc only provides presumptive test results, the substance was thereafter sent to the Missouri State Highway Patrol Crime Laboratory for confirmatory testing. That test revealed that the substance was Epsom salt, a non-controlled substance. After obtaining this result, the investigating agency contacted Thermo Fisher Scientific about the inconsistent results and were informed that they needed to update the TruNarc device with software version 1.9.0.

Upon updating the TruNarc device to software version 1.9.0, another scan of the substance was conducted which yielded the following result:



As the above graphic depicts, the results of the scan utilizing the updated software were consistent with the confirmatory laboratory testing.

However, after this scan, the investigating agency performed another scan of the substance which yielded the following result:



Although this result is inconsistent with the confirmatory laboratory test results, a visual examination of the result scan (i.e. Scan 8650) with known library standard (i.e. Phenyl-2-propanone (P2P, BMK)) reveals that the result scan does not match the known library standard. This example illustrates Thermo Fisher Scientific's recommendation that instrument results be followed with a secondary analysis technique, especially if the instrument analysis results are not consistent with what is known about the sample and all other evidence in the case.

Respectfully submitted,



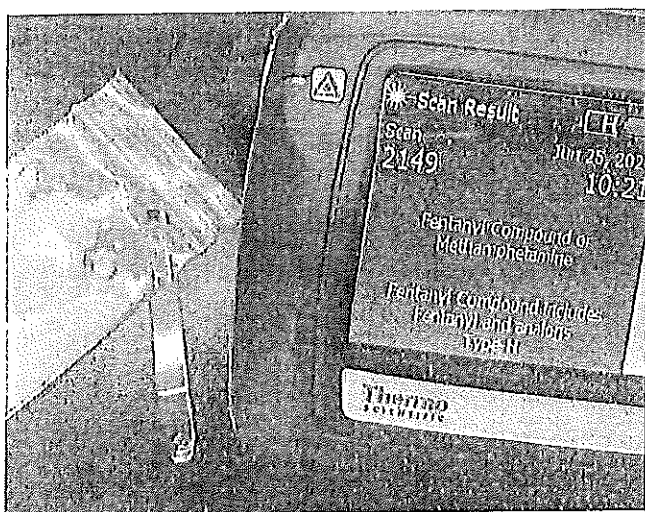
DANIEL L. WHITE
 Prosecuting Attorney
 Clay County, Missouri

Considerations when scanning for Fentanyl and Methamphetamine

Fentanyl and methamphetamine scans:

Fentanyl and methamphetamine are two illicit drugs of interest to law enforcement. When the Thermo Scientific™ TruNarc™ analyzer is used in direct (point-and-shoot) mode, these two drugs can be routinely differentiated and identified. However, if the TruNarc H-Kit method is used by the operator, the instrument will give an identification of "Fentanyl Compound and/or Methamphetamine" because of the extreme similarity of their H-Kit spectra (see figure on back page).

In the past, the scanning of fentanyl or methamphetamine using the TruNarc analyzer in direct (point and shoot) mode sometimes produced a "Fentanyl Compound and/or Methamphetamine" identification screen that required additional steps to be taken by the operator to ensure accurate results. To prevent "Fentanyl Compound and/or Methamphetamine" results from occurring in direct mode, beginning with software version 1.9.0, corresponding library spectra for H-kit and direct scans have been completely separated in the software. Consequently, in order to enhance the performance of the instrument, the operator is instructed to select either the direct scan or H-Kit before performing any test.



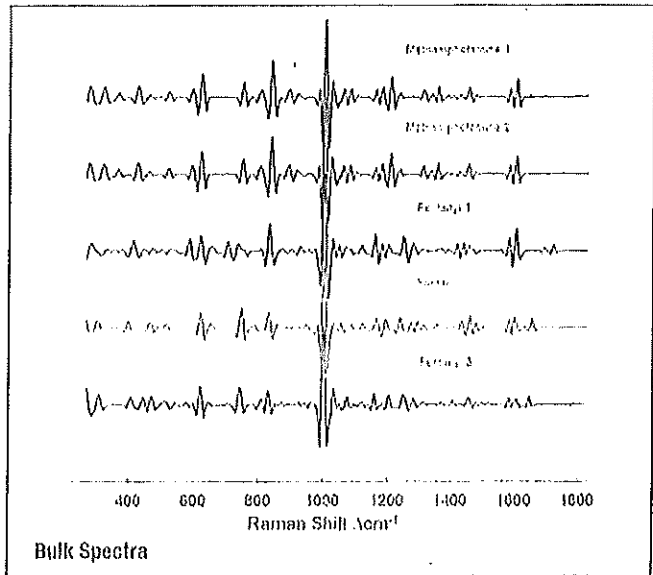
In addition, version 1.9.0 TruNarc Administrative software (and any future versions) allows a user the option to completely turn off the ability to perform H-Kit scans with the instrument, thus eliminating the possibility of the Fentanyl Compound/ Methamphetamine result from occurring in any situation.

Liquid methamphetamine scans:

In the case of liquid methamphetamine, it is recommended that a user always attempt a direct scan after allowing the liquid to completely evaporate. This can be done by placing the liquid on a surface such as paper or glass until evaporation occurs and crystals are formed. Scanning these crystals using the instrument's direct mode results in the correct identification of methamphetamine.

Recommendations:

In general, it is recommended that a user always attempt a direct scan first. Scans should be done at multiple points on the sample to address inconsistent composition. If direct scans fail to provide an identification, then an H-Kit scan can be attempted. In all instances, it is recommended that instrument results be followed with a secondary analysis technique, especially if the instrument analysis results are not consistent with what is known about the sample and all other evidence in the case.



Find out more at thermofisher.com/trunarc

ThermoFisher
SCIENTIFIC