COMPLIANCE WITH STANDARDS GOVERNING COMBINED DNA INDEX SYSTEM ACTIVITIES AT THE INDIAN RIVER CRIME LABORATORY AT INDIAN RIVER STATE COLLEGE FORT PIERCE, FLORIDA

U.S. Department of Justice
Office of the Inspector General
Audit Division

Audit Report GR-40-10-001
October 2009

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EXECUTIVE SUMMARY

The Department of Justice Office of the Inspector General (OIG), Audit Division, has completed an audit of compliance with standards governing Combined DNA Index System (CODIS) activities at the Indian River Crime Laboratory (Laboratory). The Federal Bureau of Investigation's (FBI) CODIS program blends forensic science and computer technology to provide an investigative tool to federal, state, and local crime laboratories in the United States, as well as those from select international law enforcement agencies. The CODIS program allows laboratories to compare and match DNA profiles electronically to assist law enforcement in solving crimes and identifying missing or unidentified persons.[1] The FBI's CODIS Unit manages CODIS, as well as develops, supports, and provides the program to crime laboratories to foster the exchange and comparison of forensic DNA evidence.

The FBI implemented CODIS as a distributed database with hierarchical levels that enable federal, state, and local crime laboratories to compare DNA profiles electronically. The hierarchy consists of three distinct levels that flow upward from the local level to the state level and then, if allowable, the national level. National DNA Index System(NDIS), the highest level in the hierarchy, is managed by the FBI as the nation's DNA database containing DNA profiles uploaded by law enforcement agencies across the United States. NDIS enables the laboratories participating in the CODIS program to electronically compare DNA profiles on a national level. The State DNA Index System (SDIS) is used at the state level to serve as a state's DNA database containing DNA profiles from local laboratories and state offenders. The Local DNA Index System (LDIS) is used by local laboratories.

[1] DNA, or deoxyribonucleic acid, is genetic material found in almost all living cells that contains encoded information necessary for building and maintaining life. Approximately 99.9-percent of human DNA is the same for all people. The differences found in the remaining 0.1-percent allow scientists to develop a unique set of DNA identification characteristics (a DNA profile) for an individual by analyzing a specimen containing DNA.

The objectives of our audit were to determine if the: (1) Laboratory was in compliance with the NDIS participation requirements; (2) Laboratory was in compliance with the Quality Assurance Standards (QAS) issued by the FBI; and (3) Laboratory's forensic DNA profiles in CODIS databases were complete, accurate, and allowable for inclusion in NDIS. The results of our review are below.

- We determined that the laboratory was in compliance with the NDIS participation requirements. However, we noted that for one of the six matches we reviewed, the Laboratory's response time to notify investigators of the confirmed match was 22 calendar days or 16 business days.[2] Issues of this type may be prevented by Laboratory staff emphasizing the importance of notifying investigators of matches in a timely manner. Investigators were notified timely for the other five matches we reviewed.

- The Laboratory was in compliance with the QAS tested.

- We reviewed 50 of 196 forensic profiles the Laboratory had uploaded to NDIS as of April 21, 2009. Of the 50 forensic profiles sampled, we found 1 was unallowable for upload to NDIS and 1 had an incorrect specimen number. The unallowable profile matched a known suspect and thus should not be in NDIS. The CODIS Administrator removed the unallowable profile from NDIS and corrected the inaccurate specimen identification number during the audit. For one sample we reviewed, the laboratory uploaded values that fell below the Laboratory's established threshold at one locus.[3] Once we brought this to the laboratory's attention, staff removed the questionable values from NDIS and retained the profile. Issues such as those found may be prevented by Laboratory staff focusing more on detecting all errors before profiles are uploaded to NDIS. The remaining 47 profiles we reviewed were complete, accurate, and allowable for inclusion in NDIS.

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[2] While this is not an NDIS participation requirement, the OIG uses a standard of 2 weeks to assess timely notification of matches to investigators.

[3] A "locus" is a specific location on a chromosome. The plural form of locus is loci. Quantification is commonly used in molecular biology to determine the concentrations of DNA present in a sample, as subsequent reactions or protocols using a nucleic acid sample often require particular amounts for optimum performance.

To address the laboratory's compliance with standards governing CODIS activities, we made one recommendations for retraining laboratory staff, which is discussed in the Findings and Recommendations section of the report. Our audit objectives, scope, and methodology are detailed in Appendix I of the report and the audit criteria are detailed in Appendix II.

We discussed the results of our audit with Laboratory officials and have included their comments in the report as applicable.