



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

OVERSIGHT ★ INTEGRITY ★ GUIDANCE



**Audit of Compliance with
Standards Governing Combined
DNA Index System Activities at the
Alabama Department of Forensic
Sciences Montgomery Laboratory,
Montgomery, Alabama**



Executive Summary

Audit of Compliance with Standards Governing Combined DNA Index System Activities at the Alabama Department of Forensic Sciences Montgomery Laboratory, Montgomery, Alabama

Objectives

The objectives of our audit were to determine if: (1) the Alabama Department of Forensic Sciences Montgomery Laboratory (Laboratory) was in compliance with select National DNA Index System (NDIS) Operational Procedures; (2) the Laboratory was in compliance with certain Quality Assurance Standards (QAS) issued by the Federal Bureau of Investigation (FBI); and (3) the Laboratory's forensic DNA profiles in Combined DNA Index System (CODIS) databases were complete, accurate, and allowable for inclusion in NDIS.

Results in Brief

The Department of Justice Office of the Inspector General has completed an audit of compliance with standards governing CODIS activities at the crime laboratory in Montgomery, Alabama. Our audit concluded that the Laboratory was generally in compliance with NDIS operational procedures and certain QAS we reviewed. However, we determined that the Laboratory did not always complete the NDIS match resolution process in a timely manner.

Recommendations

We made one recommendation to address the Laboratory's compliance with standards governing CODIS activities.

We requested a response to our draft audit report from the Laboratory and FBI, which can be found in Appendices 4 and 5, respectively. Our analysis of those responses is included in Appendix 6.

Audit Results

The FBI's CODIS program allows crime laboratories across the country to compare and match DNA profiles electronically to help solve crimes and identify missing persons. The FBI implemented CODIS as a distributed database consisting of three distinct hierarchical levels that flow upward from the local level to the state level and then, if allowable, the national level. NDIS, the highest level in the hierarchy, is managed by the FBI and contains DNA profiles uploaded by local, state, and federal crime laboratories. CODIS program participants must comply with FBI requirements to use the system, and this audit reviewed the Laboratory's compliance with those requirements. This audit generally covered the period from July 2012 through July 2017.

NDIS Operational Procedures - The laboratory was in compliance with most NDIS operational procedures we reviewed. However, we determined that the Laboratory did not always timely notify investigators of NDIS match confirmations, taking an average of 30 business days to report confirmed matches to local law enforcement. The Laboratory has implemented local performance goals to reduce its notification timeframes.

Quality Assurance Standards - We found that the Laboratory complied with the Forensic Quality Assurance Standards we reviewed. Specifically, the Laboratory underwent the necessary Quality Assurance reviews, adhered to laboratory security standards, including the protection of evidence integrity, and followed requirements with regard to the separation of known and unknown DNA profiles, as well as the retention of samples and extracts after analysis.

Forensic DNA Profiles - We reviewed 100 of 2,697 forensic profiles that the Laboratory uploaded to NDIS as of July 2017. All of the forensic DNA profiles sampled were complete, accurate, and allowable for inclusion in NDIS.

**AUDIT OF COMPLIANCE WITH STANDARDS GOVERNING
COMBINED DNA INDEX SYSTEM ACTIVITIES AT THE
ALABAMA DEPARTMENT OF FORENSIC SCIENCES
MONTGOMERY LABORATORY,
MONTGOMERY, ALABAMA**

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AUDIT OF COMPLIANCE WITH STANDARDS GOVERNING COMBINED DNA INDEX SYSTEM ACTIVITIES AT THE ALABAMA DEPARTMENT OF FORENSIC SCIENCES MONTGOMERY LABORATORY, MONTGOMERY, ALABAMA

INTRODUCTION

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 Alabama Department of Forensic Sciences Montgomery Laboratory (Laboratory) in Montgomery, Alabama.

The Federal Bureau of Investigation's (FBI) CODIS provides an investigative tool using forensic science and computer technology to federal, state, and local crime laboratories in the United States and, on a case-by-case basis, select international law enforcement agencies. The CODIS program allows these laboratories to compare and match DNA profiles electronically, thereby assisting law enforcement in solving crimes and identifying missing or unidentified persons.¹ The FBI's CODIS Unit manages CODIS and is responsible for its use in fostering the exchange and comparison of forensic DNA evidence.

OIG Audit Objectives

Our audit generally covered the period from July 2012 through July 2017. The objectives of our audit were to determine if: (1) the Laboratory was in compliance with select National DNA Index System (NDIS) Operational Procedures; (2) the Laboratory was in compliance with certain Quality Assurance Standards (QAS) issued by the FBI; and (3) the Laboratory's forensic DNA profiles in CODIS databases were complete, accurate, and allowable for inclusion in NDIS. Appendix 1 contains a detailed description of our audit objectives, scope, and methodology; and Appendix 2 contains the criteria used to conduct the audit.

Legal Foundation for CODIS

The FBI's CODIS program began as a pilot project in 1990. The DNA Identification Act of 1994 (Act) authorized the FBI to establish a national index of DNA profiles for law enforcement purposes. The Act, along with subsequent amendments, has been codified in a federal statute (Statute) providing the legal authority to establish and maintain NDIS.²

¹ DNA, or deoxyribonucleic acid is the hereditary material found in almost all organisms that contains encoded information necessary for building and maintaining an organism. More than 99 percent of human DNA is the same for all people. The differences found in the remaining less than 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.

² 42 U.S.C.A. § 14132 (2006).

Allowable DNA Profiles

The Statute authorizes NDIS to contain the DNA identification records of persons convicted of crimes, persons who have been charged in an indictment or information with a crime, and other persons whose DNA samples are collected under applicable legal authorities. Samples voluntarily submitted solely for elimination purposes are not authorized for inclusion in NDIS. The Statute also authorizes NDIS to include analysis of DNA samples recovered from crime scenes or from unidentified human remains, as well as those voluntarily contributed from relatives of missing persons.

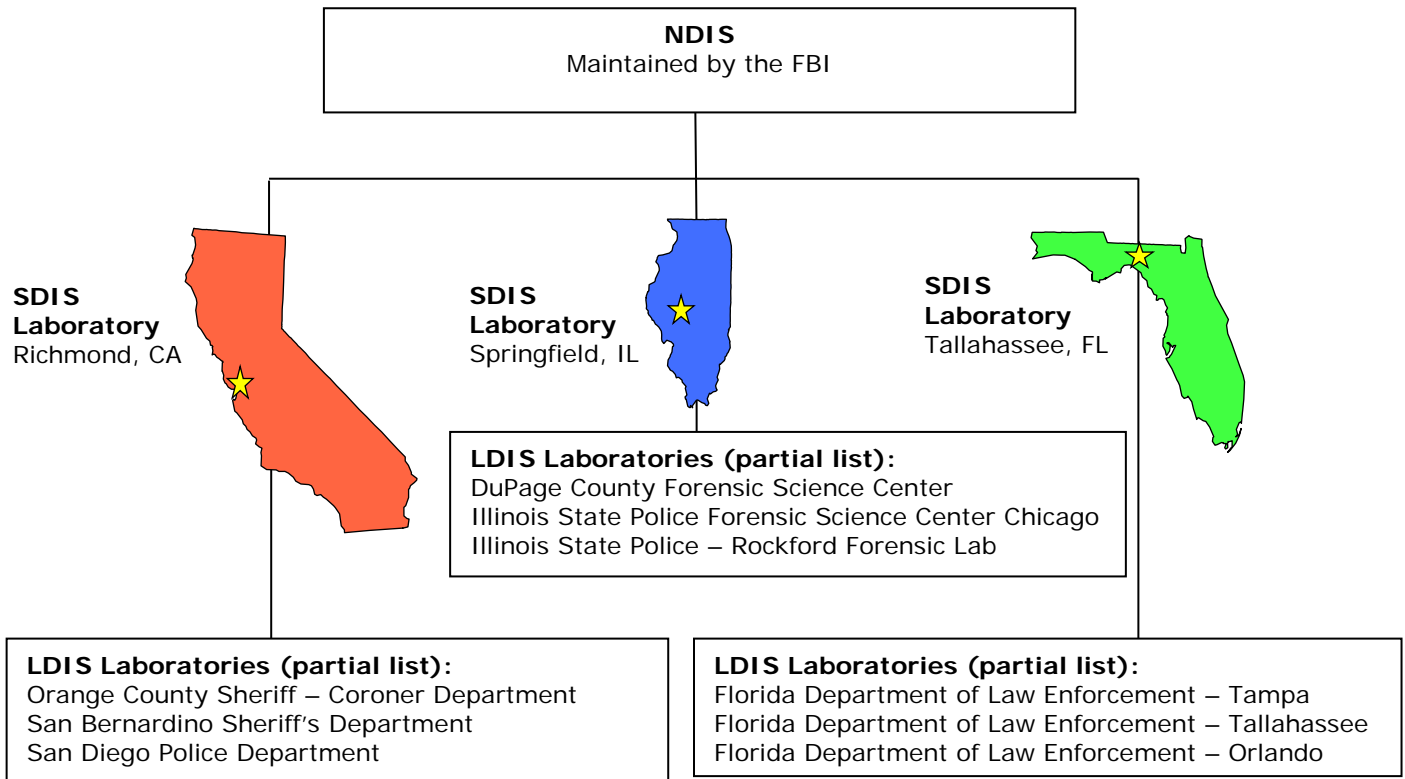
Allowable Disclosure of DNA Profiles

The Statute requires that NDIS only include DNA information that is based on analyses performed by or on behalf of a criminal justice agency – or the U.S. Department of Defense – in accordance with QAS issued by the FBI. The DNA information in the index is authorized to be disclosed only: (1) to criminal justice agencies for law enforcement identification purposes; (2) in judicial proceedings, if otherwise admissible pursuant to applicable statutes or rules; (3) for criminal defense purposes, to a defendant who shall have access to samples and analyses performed in connection with the case in which the defendant is charged; or (4) if personally identifiable information (PII) is removed for a population statistics database, for identification research and protocol development purposes, or for quality control purposes.

CODIS Architecture

The FBI implemented CODIS as a distributed database with hierarchical levels that enables federal, state, and local crime laboratories to compare DNA profiles electronically. CODIS consists of a hierarchy of three distinct levels: (1) NDIS, managed by the FBI as the nation's DNA database containing DNA profiles uploaded by participating states; (2) the State DNA Index System (SDIS), which serves as a state's DNA database containing DNA profiles from local laboratories within the state and state offenders; and (3) the Local DNA Index System (LDIS), used by local laboratories. DNA profiles originate at the local level and then flow upward to the state and, if allowable, national level. For example, the local laboratory in the Florida Department of Law Enforcement Orlando, Florida, sends its profiles to the state laboratory in Tallahassee, Florida, which then uploads the profiles to NDIS. Each state participating in CODIS has one designated SDIS laboratory. The SDIS laboratory maintains its own database and is responsible for overseeing NDIS issues for all CODIS-participating laboratories within the state. The graphic below illustrates how the system hierarchy works.

Figure 1
Example of System Hierarchy within CODIS



National DNA Index System

NDIS, the highest level in the CODIS hierarchy, enables laboratories participating in the CODIS program to electronically compare DNA profiles on a national level. NDIS does not contain names or other PII about the profiles. Therefore, matches are resolved through a system of laboratory-to-laboratory contacts. NDIS contains the following searchable indices.

- The Convicted Offender Index contains profiles generated from persons convicted of qualifying offenses.³
- The Arrestee Index is comprised of profiles developed from persons who have been arrested, indicted, or charged in an information with a crime
- The Legal Index consists of profiles that are produced from DNA samples collected from persons under other applicable legal authorities.
- The Detainee Index contains profiles from non-U.S. persons detained under the authority of the U.S. and required by law to provide a DNA sample.

³ The phrase “qualifying offenses” refers to state or federal crimes that require a person to provide a DNA sample in accordance with applicable laws.

- The Multi-allelic Offender Index consists of profiles from offenders (arrestees, convicted offenders, detainees, or legal index specimens) having three or more alleles at two or more loci.
- The Forensic Index contains DNA records originating from and associated with an evidence sample from a single source (or a fully deduced profile originating from a mixture) that was found at a crime scene.
- The Forensic Mixture Index profiles originate from forensic samples that contain DNA contributed from more than one source attributable to a putative perpetrator(s).
- The Forensic Partial Index consists of DNA profiles from forensic samples that do not contain the results for all 13 Original CODIS Core Loci and/or that may indicate a possibility of allelic dropout.
- The Missing Person Index contains known DNA records of missing persons and deduced missing persons.
- The Unidentified Human (Remains) Index holds profiles from unidentified living individuals and the remains of unidentified deceased individuals.⁴
- The Relatives of Missing Person Index is comprised of DNA profiles generated from the biological relatives of individuals reported missing.
- The Pedigree Tree Index consists of DNA records of biological relatives and spouses of missing persons that are associated with a pedigree tree.

Given the multiple indices, the main functions of CODIS are to: (1) generate investigative leads that may help in solving crimes and (2) identify missing and unidentified persons.

The Forensic Index generates investigative leads in CODIS that may help solve crimes. Investigative leads may be generated through matches between the Forensic Index and other indices in the system, including the Convicted Offender, Arrestee, and Legal Indices. These matches may provide investigators with the identity of suspected perpetrators. CODIS also links crime scenes through matches between Forensic Index profiles, potentially identifying serial offenders.

In addition to generating investigative leads, CODIS furthers the objectives of the FBI's National Missing Person DNA Database program through its ability to identify missing and unidentified individuals. For instance, those persons may be identified through matches between the profiles in the Missing Person Index and the Unidentified Human (Remains) Index. In addition, the profiles within the Missing Person and Unidentified Human (Remains) Indices may be searched against the Forensic, Convicted Offender, Arrestee, Detainee, and Legal Indices to provide investigators with leads in solving missing and unidentified person cases.

⁴ An example of an Unidentified Human (Remains) Index profile from a living person is a profile from a child or other individual, who cannot or refuses to identify themselves.

State and Local DNA Index Systems

The FBI provides CODIS software free of charge to any state or local law enforcement laboratory performing DNA analysis. Laboratories are able to use the CODIS software to upload profiles to NDIS. However, before a laboratory is allowed to participate at the national level and upload DNA profiles to NDIS, a Memorandum of Understanding (MOU) must be signed between the FBI and the laboratory. The MOU defines the responsibilities of each party, includes a sublicense for the use of CODIS software, and delineates the standards laboratories must meet in order to utilize NDIS.

States are authorized to upload DNA profiles to NDIS based on local, state, and federal laws, as well as NDIS regulations. However, states or localities may maintain NDIS-restricted profiles in SDIS or LDIS. For instance, a local law may allow for the collection and maintenance of a victim profile at LDIS but NDIS regulations do not authorize the upload of that profile to the national level.

The utility of CODIS relies upon the completeness, accuracy, and quality of profiles that laboratories upload to the system. Incomplete CODIS profiles are those for which the required number of core loci were not tested or do not contain all of the conclusive DNA information that resulted from a DNA analysis and may not be searched at NDIS.⁵ The probability of a false match among DNA profiles is reduced as the completeness of a profile increases. Inaccurate profiles, which contain incorrect DNA information, may generate false positive leads, false negative comparisons, or lead to the identification of an incorrect sample. Further, laws and regulations exclude certain types of profiles from being uploaded to CODIS to prevent violations to an individual's privacy and foster the public's confidence in CODIS. Therefore, it is the responsibility of the Laboratory to ensure that it is adhering to the NDIS Operational Procedures and the profiles uploaded to CODIS are complete, accurate, and allowable for inclusion in NDIS.

Laboratory Information

The Alabama Department of Forensic Sciences Montgomery Laboratory services 24 counties in Alabama. The Laboratory participates in the CODIS program as an LDIS laboratory. The Laboratory began using DNA to process criminal cases in 1993. It performs analysis on forensic samples only and has not outsourced the analysis of samples. The Laboratory began uploading profiles to NDIS in 1998. The American Society of Crime Laboratory Directors/Laboratory Accreditation Board most recently accredited the Laboratory in November 2013 for a period of 5 years.⁶

⁵ A "locus" is a specific location of a gene on a chromosome. The plural form of locus is loci. As of January 1 2017, the FBI expanded the minimum number of CODIS Core Loci by 7, to a total of 20 core loci.

⁶ The American Society of Crime Laboratory Directors/Laboratory Accreditation Board one of two separate accrediting agencies within ANSI-ASO National Accreditation Board.

AUDIT RESULTS

Compliance with Select NDIS Operational Procedures

The NDIS Operational Procedures Manual, which includes the NDIS Laboratories Participation Requirements, establishes the responsibilities and obligations of laboratories that participate in the CODIS program at the national level. The NDIS Operational Procedures provide detailed instructions for laboratories to follow when performing certain procedures pertinent to NDIS. The NDIS Operational Procedures we reviewed are listed in Appendix 2 of this report.

We found that the Laboratory complied with the NDIS Operational Procedures we reviewed specific to proper safeguards to protect the security of the CODIS terminal, required CODIS user information being provided to the FBI, the completion of required training by Laboratory CODIS users, and access to the NDIS Operational Procedures Manual by CODIS users. However, we determined that the Laboratory did not always timely confirm matches or timely notify investigators of confirmed matches. These results are described in more detail below.

NDIS Match Resolution

NDIS Operational Procedures state that casework laboratories are equally responsible for the review and evaluation of a forensic match and coordinating match follow-up. When a casework laboratory uploads a forensic profile that returns a match to a convicted offender, it is responsible for reviewing and evaluating the match and initiating contact with the other laboratory to coordinate match follow-up. For all matches, the responding laboratory should make a good faith effort to respond to the initiating casework laboratory within 30 business days of receipt of the request. In addition, the OIG has an established 2-week standard from the date the match is confirmed to assess a laboratory's timely notification to investigators. The rationale behind this timeframe is to mitigate the potential safety risk of a suspected perpetrator committing additional, and possibly more egregious, crimes.

From January 2015 to June 2017, the Laboratory identified 111 NDIS matches. From these 111 NDIS matches, we initially selected a judgmental sample of 10, which included forensic-to-forensic, forensic-to-arrestee, and forensic-to-offender matches. Because we identified delays in the match confirmation process and notification to investigators, we subsequently expanded our testing to encompass all confirmed NDIS matches from August 2016 through July 2017. We tested a total of 40 matches, which are listed in Appendix 3.

We reviewed available documentation to determine if the Laboratory confirmed the matches in a timely manner and made timely notifications to investigators regarding confirmed matches. We noted that the Laboratory was delayed in initiating requests for match confirmation after receiving a CODIS match report. For the 40 matches we sampled, the Laboratory took, on average, 21 business days (approximately 1 month) to begin the confirmation process.

However, the Laboratory took more than 30 business days to begin the confirmation process for 10 of these match confirmations. While the NDIS Operational Procedures Manual does not specify a time requirement for this part of the process, we believe that timely initiation of match confirmations is important to the mission of the CODIS program to assist law enforcement agencies in solving crimes in a timely manner.

Once the Laboratory began the confirmation process, it confirmed the match with the other laboratories within 30 days for 38 of the 40 matches we sampled. As an example of a delayed confirmation, forensic-to-offender match, Sample Item Number 5, was identified in May 2016 but the Laboratory did not start the confirmation process until September 2016. The other Laboratory then took until October 2016, 32 business days, to confirm the match.

For our sample of 40 matches, the Laboratory then took between 3 and 147 business days to notify investigators of confirmed matches. For 10 of the 40 matches, the notification to the investigators occurred more than 30 days after the match was confirmed. On average for all 40 matches, it took the Laboratory 30 business days to report confirmed matches to the local investigators.

Timely completion of the match confirmation process and timely notifications to investigators is important to mitigate the potential safety risk of a suspected perpetrator committing additional and possibly more egregious crimes if the individual is not deceased or already incarcerated for the commission of other crimes. The cases included in our sample involved homicide, rape, burglary, robbery, and theft. The seriousness of these crimes demonstrates the importance of identifying the suspected perpetrators in a timely manner.

We discussed with the Laboratory's Forensic Section Chief the problems we identified with timely match confirmations. The Section Chief attributed the delays to a long transition the Laboratory experienced in bringing onboard a new CODIS Administrator. The Section Chief told us that in late 2016 the Laboratory recognized that confirmations had been delayed and that the statewide CODIS Administrator visited the Laboratory in April 2017 to provide training on the match process. The Section Chief also told us that in April 2017 the Laboratory updated its personnel performance appraisal plans to include requirements and timeframes for match reports to be timely issued to investigators. While the Laboratory has taken positive action to improve the timeliness of match confirmations, we believe the timeliness of recent matches as shown in Appendix 3 demonstrates that further action is needed. Specifically, the Laboratory took more than 2 weeks to notify local investigators for 7 of the 14 matches in which notifications occurred after the April 2017 training. Further, the Laboratory took an average of 22 business days (more than 1 month) to notify investigators of these 14 matches. We believe the Laboratory should synchronize its local procedures with its performance standards. Consequently, we recommend that the Laboratory develop and implement a written policy to ensure that CODIS match confirmation is a priority, and integrate into that policy the timeframes that the Laboratory added to performance appraisals for both

initiating the confirmation of matches and notifying investigators of those confirmed matches to help ensure timeliness.

The Laboratory complied with the other NDIS operational procedures we reviewed, as described below.

- We interviewed the two CODIS Administrators and conducted a walk-through tour of the Laboratory. We verified that the CODIS terminal is physically safeguarded from unauthorized use, and that access to CODIS is limited to approved personnel.
- We interviewed the CODIS Administrators and reviewed documents and determined that the Laboratory provided appropriate personnel with copies of the NDIS procedures manual. We also interviewed two of four CODIS users and determined that both understood NDIS procedures and could access the procedures on the FBI's Criminal Justice Information System Wide Area Network.
- For each CODIS user, the Laboratory is required to send certain background and security information to the FBI. We verified that the Laboratory submitted the required information to the FBI and that all Laboratory CODIS users have completed the required 2017 DNA Records Acceptable at NDIS training.
- We verified that the Laboratory timely submitted the results of its most recent external audit to the FBI.

Compliance with Certain Quality Assurance Standards

During our audit, we reviewed the Forensic QAS issued by the FBI.⁷ These standards describe the quality assurance requirements that the Laboratory must follow to ensure the quality and integrity of the data it produces. We also assessed the two most recent QAS reviews that the laboratory underwent.⁸ The QAS we reviewed are listed in Appendix 2 of this report.

We found that the Laboratory complied with the Forensic QAS we tested. Specifically, the Laboratory complied with standards for QAS reviews, laboratory security, protection of the integrity of evidence, separation of known and unknown samples, and the retention of samples and extracts after analysis. These results are described in more detail below.

⁷ Forensic Quality Assurance Standards refer to the Quality Assurance Standards for Forensic DNA Testing Laboratories, effective September 1, 2011.

⁸ The QAS require that laboratories undergo annual audits. Every other year, the QAS requires that the audit be performed by an audit team of qualified auditor(s) from an external agency. These audits are not required by the QAS to be performed in accordance with the *Government Auditing Standards* (GAS) and are not performed by the Department of Justice Office of the Inspector General. Therefore, we will refer to the QAS audits as reviews (either an internal laboratory review or an external laboratory review, as applicable) to avoid confusion with our audits that are conducted in accordance with GAS.

- The Laboratory underwent a QAS review during each of the last 2 calendar years as required by the QAS for laboratory reviews. The Laboratory underwent a QAS review by internal reviewers in April 2016 and by external reviewers in April 2017.
- We reviewed the most recent QAS review reports provided by a CODIS Administrator and determined that the FBI's QAS review document was used to conduct the most recent external and internal reviews. The FBI confirmed that the QAS reviewers for both reviews had successfully completed the FBI QAS review training course. There were no findings in the most recent external or internal review reports. The Laboratory forwarded the most recent external QAS review report to the FBI within 30 days of completion. The QAS reviewer who conducted the most recent external QAS review certified that she was free from conflict of interest.
- We interviewed a CODIS Administrator and toured the Laboratory building and, determined that it:
 - had adequate physical access controls in place;
 - had adequate procedures in place to ensure the integrity of physical evidence;
 - had adequate policies and practices regarding the separation of known and unknown samples during the analysis process; and
 - was in compliance with forensic standards governing the retention of samples and extracts after analysis.
- We interviewed the Laboratory Director and determined that the Laboratory does not outsource the analysis of DNA samples and does not have contract employees.

Suitability of Forensic DNA Profiles in CODIS Databases

We reviewed a sample of the Laboratory's Forensic DNA profiles to determine whether each profile was complete, accurate, and allowable for inclusion in NDIS. To test the completeness and accuracy of each profile, we established standards that require a DNA profile include each value returned at each locus for which the lab obtained conclusive results, and that the values at each locus match those identified during analysis. Our standards are described in more detail in Appendix 2 of this report.

The FBI's NDIS Operational Procedures Manual establishes the DNA data acceptance standards by which laboratories must abide. The FBI also developed guidance for the laboratories for determining what is allowable in the forensic index at NDIS. Laboratories are prohibited from uploading forensic profiles to NDIS that clearly match the DNA profile of the victim or another known person that is not a suspect. A profile at NDIS that matches a suspect may be allowable if the contributor is unknown at the time of collection, however, NDIS guidelines prohibit profiles that match a suspect if that profile could reasonably have been expected to be on an item at the crime scene or part of the crime scene independent of the

crime. For instance, a profile from an item seized from the suspect's person, such as a shirt, or that was in the possession of the suspect when collected is generally not a forensic unknown and would not be allowable for upload to NDIS. The NDIS procedures we reviewed are listed in Appendix 2 of this report.

We selected a sample of 100 profiles out of the 2,697 forensic profiles the Laboratory had uploaded to NDIS as of July 2017. We found that all profiles reviewed were complete, accurate, and allowable for inclusion in NDIS.

CONCLUSION AND RECOMMENDATION

We found that the Laboratory was in compliance with select NDIS participation requirements we tested related to the security of the CODIS terminal, CODIS user information provided to the FBI, required training, and access to the NDIS Procedures for CODIS users. However, our testing identified instances where the Laboratory delayed starting the match process, did not confirm all matches within 30 days, and took more than 2 weeks to notify investigators. We believe that these delays can increase the risk of a suspected perpetrator committing additional, and possibly more egregious, crimes. Although the Laboratory updated its personnel performance appraisal plans to include timely match notifications to investigators, we believe the Laboratory can improve its performance in this critical area by implementing a written policy to ensure that CODIS match confirmation is a priority.

We also determined that the Laboratory complied with FBI issued forensic quality assurance standards we reviewed including laboratory security, the protection of evidence integrity, and the retention of samples and extracts after analysis. Our review of a sample of forensic profiles found that all profiles were complete, accurate, and allowable for inclusion in NDIS.

We recommend that the FBI:

1. Ensure that the Laboratory implements a written policy prioritizing NDIS match confirmations that includes the timeframes that the Laboratory added to performance appraisals for both initiating the confirmation of matches and notifying investigators of those confirmed matches.

OBJECTIVES, SCOPE, AND METHODOLOGY

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Our audit generally covered the period from July 2012 through July 2017. The objectives of the audit were to determine if the: (1) Laboratory was in compliance with select National DNA Index System (NDIS) Operational Procedures; (2) Laboratory was in compliance with certain 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. To accomplish the objectives of the audit, we:

- Examined internal and external Laboratory QAS review reports and supporting documentation for corrective action taken, if any, to determine whether: (a) the Laboratory complied with the QAS, (b) repeat findings were identified, and (c) recommendations were adequately resolved.

In accordance with the QAS, a laboratory shall establish, follow, and maintain a documented quality system with procedures that address, at a minimum, a laboratory's quality assurance program, organization and management, personnel, facilities, evidence and sample control, validation, analytical procedures, calibration and maintenance of equipment, proficiency testing, corrective action, review, documentation and reports, safety, audits, and outsourcing. The QAS require that internal and external reviews be performed by personnel who have successfully completed the FBI's training course for conducting such reviews. We obtained evidence concerning: (1) the qualifications of the internal and external reviewers, and (2) the independence of the external reviewers.

- Interviewed Laboratory officials to identify management controls, Laboratory operational policies and procedures, Laboratory certifications or accreditations, and analytical information related to DNA profiles.
- Toured the Laboratory to observe facility security measures as well as the procedures and controls related to the receipt, processing, analyzing, and storage of forensic evidence and convicted offender DNA samples.
- Reviewed the Laboratory's written policies and procedures related to conducting internal reviews, resolving review findings, expunging DNA profiles from NDIS, and resolving matches among DNA profiles in NDIS.
- Reviewed supporting documentation for 40 of 111 NDIS matches to determine whether they were resolved in a timely manner. The Laboratory provided the universe of NDIS matches as of July 2017. The sample was judgmentally

selected to include both case-to-case and case-to-offender matches. This non-statistical sample does not allow projection of the test results to all matches.

- Reviewed the case files for selected forensic DNA profiles to determine if the profiles were developed in accordance with the Forensic QAS and were complete, accurate, and allowable for inclusion in NDIS.

We obtained an electronic file identifying the specimen identification numbers of 2,697 searchable forensic profiles the Laboratory had uploaded to NDIS between July 2012 and July 2017. We limited our review to a sample of 100 profiles. This sample size was determined judgmentally because preliminary audit work determined that risk was not unacceptably high.

- Using the judgmentally-determined sample size, we employed a stratified sample design to randomly select a representative sample of profiles in our universe. However, since the sample size was judgmentally determined, the results obtained from testing this limited sample of profiles may not be projected to the universe of profiles from which the sample was selected.

The objectives of our audit concerned the Laboratory's compliance with required standards and the related internal controls. Accordingly, we did not attach a separate statement on compliance with laws and regulations or a statement on internal controls to this report. See Appendix 2 for detailed information on our audit criteria.

AUDIT CRITERIA

In conducting our audit, we considered the NDIS Operational Procedures, QAS, and guidance issued by the FBI regarding forensic profile allowability in NDIS. However, we did not test for compliance with elements that were not applicable to the Laboratory. In addition, we established standards to test the completeness and accuracy of DNA profiles as well as the timely notification of DNA profile matches to law enforcement.

NDIS Operational Procedures

The NDIS Operational Procedures, which include the NDIS Participation Requirements, establish the responsibilities of the FBI and the NDIS participating laboratories. We focused our audit on the following specific sections of the NDIS Procedures:

- NDIS Laboratories
- Quality Assurance Standards Audit Review
- NDIS Confirmation and Hit Dispositioning
- NDIS DNA Records
- DNA Data Acceptance Standards
- NDIS Searches
- NDIS Security Requirements

Quality Assurance Standards

The FBI issued two sets of QAS: (1) QAS for Forensic DNA Testing Laboratories, effective September 1, 2011 (Forensic QAS); and (2) QAS for DNA Databasing Laboratories, effective September 1, 2011 (Offender QAS). The Forensic QAS and the Offender QAS describe the quality assurance requirements that the Laboratory should follow to ensure the quality and integrity of the data it produces.

For our audit, we reviewed the Laboratory's most recent annual external review and performed audit work to verify that the Laboratory was in compliance with the QAS listed below because they have a substantial effect on the integrity of the DNA profiles uploaded to NDIS.

- Facilities (Forensic QAS and Offender QAS 6.1): The laboratory shall have a facility that is designed to ensure the integrity of the analyses and the evidence.
- Evidence Control (Forensic QAS 7.1 and 7.2): The laboratory shall have and follow a documented evidence control system to ensure the integrity of physical evidence. Where possible, the laboratory shall retain or return a portion of the evidence sample or extract.

- Analytical Procedures (Forensic QAS and Offender QAS 9.5): The laboratory shall monitor the analytical procedures using [appropriate] controls and standards.
- Review (Forensic QAS 12.1): The laboratory shall conduct administrative and technical reviews of all case files and reports to ensure conclusions and supporting data are reasonable and within the constraints of scientific knowledge.

(Offender QAS Standard 12.1): The laboratory shall have and follow written procedures for reviewing DNA records and DNA database information, including the resolution of database matches.

- [Reviews] (Forensic QAS and Offender QAS 15.1 and 15.2): The laboratory shall be audited annually in accordance with [the QAS]. The annual audits shall occur every calendar year and shall be at least 6 months and no more than 18 months apart.

At least once every 2 years, an external audit shall be conducted by an audit team comprised of qualified auditors from a second agency(ies) and having at least one team member who is or has been previously qualified in the laboratory's current DNA technologies and platform.

- Outsourcing (Forensic QAS and Offender QAS Standard 17.1): A vendor laboratory performing forensic and database DNA analysis shall comply with these Standards and the accreditation requirements of federal law.
- Forensic QAS 17.4: An NDIS participating laboratory shall have and follow a procedure to verify the integrity of the DNA data received through the performance of the technical review of DNA data from a vendor laboratory.

Office of the Inspector General Standards

We established standards to test the completeness and accuracy of DNA profiles as well as the timely notification of law enforcement when DNA profile matches occur in NDIS. Our standards are listed below.

- Completeness of DNA Profiles: A profile must include each value returned at each locus for which the lab obtained conclusive results. Our rationale for this standard is that the probability of a false match among DNA profiles is reduced as the number of loci included in a profile increases. A false match would require the unnecessary use of laboratory resources to refute the match.
- Accuracy of DNA Profiles: The values at each locus of a profile must match those identified during analysis. Our rationale for this standard is that inaccurate profiles may: (1) preclude DNA profiles from being matched and, therefore, the potential to link convicted offenders to a crime or to link previously unrelated crimes to each other may be lost; or (2) result in a false match that would require the unnecessary use of laboratory resources to refute the match.
- Timely Notification of Law Enforcement When DNA Profile Matches Occur in NDIS: Laboratories should notify law enforcement personnel of NDIS

matches within 2 weeks of the match confirmation date, unless there are extenuating circumstances. Our rationale for this standard is that untimely notification of law enforcement personnel may result in the suspected perpetrator committing additional, and possibly more egregious, crimes if the individual is not deceased or already incarcerated for the commission of other crimes.

APPENDIX 3

**NUMBER OF BUSINESS DAYS BETWEEN NDIS MATCH
CONFIRMATION AND NOTIFICATION TO LOCAL
INVESTIGATORS⁹**

Sample Item Number	Type of Match	Match Confirmed	Investigators Notified	Number of Elapsed Business days
1	Forensic-to-Forensic	7/28/2015	8/31/2015	25
2	Forensic-to-Forensic	8/24/2015	9/15/2015	17
3	Forensic-to-Forensic	2/26/2016	7/13/2016	99
4	Forensic-to-Offender	3/9/2016	4/26/2016	35
11	Forensic-to-Arrestee	8/22/2016	9/26/2016	26
12	Forensic-to-Forensic	8/23/2016	10/5/2016	32
13	Forensic-to-Offender	9/9/2016	10/6/2016	20
14	Forensic-to-Arrestee	10/20/2016	2/28/2017	94
5	Forensic-to-Offender	10/20/2016	4/13/2017	120
6	Forensic-to-Forensic	11/2/2016	12/27/2016	37
15	Forensic-to-Forensic	11/8/2016	12/30/2016	36
16	Forensic-to-Forensic	11/17/2016	1/3/2017	31
17	Forensic-to-Forensic	11/28/2016	2/28/2017	63
7	Forensic-to-Arrestee	11/29/2016	1/3/2017	24
18	Forensic-to-Offender	12/8/2016	12/22/2016	11
19	Forensic-to-Offender	2/28/2017	3/27/2017	20
20	Forensic-to-Offender	3/2/2017	4/5/2017	25
21	Forensic-to-Forensic	3/2/2017	9/27/2017	147
22	Forensic-to-Offender	3/6/2017	3/26/2017	15
23	Forensic-to-Offender	3/6/2017	4/4/2017	22
8	Forensic-to-Arrestee	3/9/2017	3/31/2017	17
24	Forensic-to-Offender	3/9/2017	4/5/2017	20
25	Forensic-to-Offender	3/9/2017	4/14/2017	27
26	Forensic-to-Offender	3/9/2017	4/18/2017	29
27	Forensic-to-Offender	3/21/2017	4/12/2017	17
28	Forensic-to-Offender	3/28/2017	4/17/2017	15
29	Forensic-to-Offender	3/29/2017	4/26/2017	21
9	Forensic-to-Forensic	4/5/2017	5/15/2017	29
30	Forensic-to-Offender	5/5/2017	5/18/2017	10
31	Forensic-to-Offender	5/5/2017	5/31/2017	18
32	Forensic-to-Offender	5/8/2017	5/12/2017	5
33	Forensic-to-Offender	5/10/2017	5/26/2017	13
34	Forensic-to-Offender	5/16/2017	5/30/2017	10
35	Forensic-to-Offender	5/25/2017	5/30/2017	3
36	Forensic-to-Forensic	6/6/2017	6/14/2017	7
37	Forensic-to-Offender	7/5/2017	7/13/2017	7
10	Forensic-to-Offender	7/5/2017	8/4/2017	23
38	Forensic-to-Offender	7/19/2017	8/10/2017	17
39	Forensic-to-Offender	7/27/2017	8/2/2017	5
40	Forensic-to-Arrestee	8/8/2017	8/24/2017	13

Source: Alabama Department of Forensic Science

⁹ The shaded rows were included in our initial testing prior to expanding our sample.

**ALABAMA DEPARTMENT OF FORENSIC SCIENCES-MONTGOMERY
LABORATORY RESPONSE TO THE DRAFT AUDIT REPORT¹⁰**



ALABAMA
DEPARTMENT OF FORENSIC SCIENCES

Mobile Regional Laboratory
P. O. Box 7925
Mobile, Alabama 36670-7925
Office Phone: (251) 479-2322

Laboratory Director: Timothy McSpadden
2451 USA Medical Center Drive, Annex C
Mobile, Alabama 36617
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February 2, 2018

Ferris B. Polk
Regional Audit Manager
U.S. Department of Justice
Office of the Inspector General
Atlanta Regional Audit Office
75 Ted Turner Drive Southwest, Suite 1130
Atlanta, Georgia 30303

Dear Mr. Polk,

The State of Alabama, Department of Forensic Sciences, has reviewed the Draft Report provided by your office on January 26, 2018, regarding our compliance with the Standards governing the Combined DNA Index System activities within the Department's Montgomery Regional Laboratory.

We feel the conclusions provided in your Draft report serve to highlight what an excellent Quality system is clearly in place within the Forensic Biology section of the Montgomery Regional Laboratory, and we were delighted to showcase our first rate program to the members of your staff during the course of our assessment.

In accordance with the associated procedures governing our assessment, the State of Alabama respectfully offers the following comments and suggestions for your review and consideration prior to the issuance of a Final Report:

The auditors identified, and the State of Alabama concurs, that over the time period assessed the Montgomery Laboratory did not always initiate match confirmations in a timely manner. Additionally, the OIG has established a "2-week standard" from the match confirmation date for the laboratory to notify investigators. We feel it is important to note that this OIG standard, while commendable, is above what is required within the FBI's NDIS Operational Procedures. The State of Alabama continues to welcome suggestions on how to continually improve the confirmation and customer notification timelines, even as the number of CODIS hits continues to grow each year.

1. The Alabama Department of Forensic Sciences Biology Section has always welcomed recommendations to improve its Quality System, with this occurrence providing no exception. However, the State of Alabama would like to expand upon the points

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¹⁰ The attachment to this response was not included in this final report.

addressed in the Draft Report regarding the single recommendation for ensuring that match confirmations are initiated in a timely manner and that investigators are notified in a timely manner.

The auditors assessed these two metrics upon an expanded set of cases (40) that included all NDIS matches from August 2016 through July 2017. The Montgomery Laboratory took, on average, 21 business days to initiate match confirmations and took, on average, 30 business days to notify investigators of confirmed matches within this set of cases.

While these metrics do not violate the NDIS Operational Procedures or the FBI's *Quality Assurance Standards for Forensic DNA Testing Laboratories*, the State of Alabama identified and proactively addressed these metrics by providing onsite training to the Local CODIS Administrator by the State CODIS Administrator on April 27, 2017. Additionally, in April of 2017 the State's *Responsibilities and Results* (performance expectations for staff members upon which annual appraisals are based) were revised for qualified analysts to ensure that investigators are notified of CODIS hits in a timely manner. .

Seven of the 40 cases assessed by the auditors contained NDIS matches with Match Dates *after* both the training provided to the Local CODIS Administrator and the revision of the performance expectations were implemented. A significant improvement in these two metrics was noted within these seven cases as the Montgomery Laboratory took, on average, 0.9 days to initiate match confirmations and took, on average, 12.1 days to notify investigators of confirmed matches (see attached Table 1).

It is our opinion that the written policy recommended by the auditors is not necessary as the issues identified by the auditors have already been effectively addressed by the onsite training provided to the Local CODIS Administrator and the revision of the performance expectations. This is objectively demonstrated by the significant improvements in the average numbers of business days to initiate a match confirmation and the timely notification of match details to investigators.

Additionally, the State of Alabama respectfully requests that the OIG redact the individual NDIS Match ID numbers contained within the body of the report, so the confidentiality of pending criminal investigations is not inadvertently jeopardized.

The State of Alabama is pleased that the auditors from the Office of the Inspector General found the Montgomery Laboratory to be in compliance with the Standards governing our CODIS activities. Alabama prides itself in its Forensic Biology program, and is very pleased that this independent assessment demonstrated objective compliance with the Federal Standards.

Should you have any further questions, or require clarification on any of the issues detailed above, please do not hesitate to contact me at your earliest convenience.

Sincerely,

A handwritten signature in blue ink that reads "Jason Kokoszka". The signature is written in a cursive style and is positioned above a horizontal line.

Jason E. Kokoszka, PhD, F-ABC
Chief of Forensic Biology & DNA
Alabama Department of Forensic Sciences

cc. Doug Hares, PhD
NDIS Custodian
FBI Laboratory
2501 Investigation Parkway
Quantico, VA 22135

FEDERAL BUREAU OF INVESTIGATION
RESPONSE TO THE DRAFT AUDIT REPORT



U.S. Department of Justice
Federal Bureau of Investigation

Washington, D.C. 20535-0001

February 26, 2018

Ferris Polk, Regional Audit Manager
Atlanta Regional Audit Office
Office of the Inspector General
75 Ted Turner Drive Southwest, Suite 1130
Atlanta, GA 30303

Dear Mr. Polk:

Your memorandum, to Director Wray, forwarding the draft audit report for the Alabama Department of Forensic Sciences Montgomery Laboratory, Montgomery, Alabama ("Laboratory"), has been referred to me for response.

Your draft audit report contained one recommendation relating to the Laboratory's compliance with the FBI's Memorandum of Understanding and *Quality Assurance Standards for Forensic DNA Testing Laboratories*.

With respect to recommendation one relating to the timely initiation of the match confirmation process and notification to law enforcement, the FBI affirms that disposition of matches is paramount in advancing criminal investigations and solving crimes. Therefore, the FBI concurs with the recommendation to the Laboratory. The Laboratory, also understanding the necessity to disposition matches timely, devised and executed a plan to train its personnel and include in its written performance metrics the expectation that the match confirmation process should be fully completed in 30 days. Since implementation of the plan, the Laboratory substantially reduced the amount of time it takes to initiate match confirmations and notify investigators of confirmed matches. The FBI CODIS Unit is in contact with the Laboratory and is working with its staff to reach a mutually acceptable written procedure that enhances the Laboratory's match confirmation process. The CODIS Unit will monitor the Laboratory's progress in completing this task.

Thank you for sharing the draft audit report with us. If you have any questions, please feel free to contact me at (703) 632-8315.

Sincerely,

Richard E. Wilson
CODIS Unit Chief
Laboratory Division

**OFFICE OF THE INSPECTOR GENERAL
ANALYSIS AND SUMMARY OF ACTIONS
NECESSARY TO CLOSE THE REPORT**

The Office of the Inspector General (OIG) provided a draft of this audit report to the Alabama Department of Forensic Sciences-Montgomery Laboratory (Laboratory), and the Federal Bureau of Investigation (FBI). We incorporated the Laboratory's response in Appendix 4, and the FBI's response in Appendix 5 of this final report. In response to our draft audit report, the FBI concurred with our recommendation, and as a result, the status of the audit report is resolved. The following provides the OIG analysis of the response and summary of actions necessary to close the report.

Analysis of the Laboratory Response

In its response, the Laboratory requested that we redact individual NDIS Match Identification numbers contained within the body of the report to protect the confidentiality of pending criminal investigations. In this final report, we replaced all NDIS Match Identification numbers with OIG sample numbers.

Recommendation for the FBI:

- 1. Ensure that the Laboratory implements a written policy prioritizing NDIS match confirmations that includes the timeframes that the Laboratory added to performance appraisals for both initiating the confirmation of matches and notifying investigators of those confirmed matches.**

Resolved. The FBI concurred with our recommendation. The FBI stated in its response that the Laboratory understood the necessity to disposition matches timely. The Laboratory devised and executed a plan to train its personnel and include in its written performance metrics the expectation that the match confirmation process should be fully completed in 30 days. The FBI further stated that since implementation of the plan, the Laboratory substantially reduced the amount of time it took to initiate match confirmations and notify investigators of confirmed matches. The FBI CODIS Unit's response stated that it is in contact with the Laboratory and is working with its staff to reach a mutually acceptable written procedure that enhances the Laboratory's match confirmation process. The FBI CODIS Unit further stated that it will monitor the Laboratory's progress in completing this task.

The Laboratory neither agreed nor disagreed with our recommendation. However, the Laboratory did state in its response that the written policy recommended by the auditors is not necessary. The Laboratory acknowledged our conclusion that the Laboratory took, on average, 21 business days to initiate match confirmations and took, on average, 30

business days to notify investigators of confirmed matches within this set of cases. However, the Laboratory noted that these metrics do not violate the NDIS Operational Procedures or the FBI's *Quality Assurance Standards for Forensic DNA Testing Laboratories*. The Laboratory stated that the issues identified by the auditors have already been effectively addressed by the onsite training provided to the Local CODIS Administrator and the revision of the performance expectations. The Laboratory reported that 7 of the 40 cases assessed by the auditors contained NDIS matches with match dates after both the training provided to the Local CODIS Administrator and the revision of the performance expectations were implemented. The Laboratory reported it had a significant improvement in these two metrics within these seven cases as the Laboratory took, on average, 0.9 days to initiate match confirmations and 12.1 days, on average, to notify investigators of confirmed matches.

Although not an NDIS requirement, our rationale for the 2-week standard is that untimely notification of law enforcement personnel may result in the suspected perpetrator committing additional, and possibly more egregious, crimes if the individual is not deceased or already incarcerated for the commission of other crimes. We recognize the improvement the Laboratory reported for those seven cases. However, employee performance is measured on expectations not identified in the Laboratory's policy manual. Given the effectiveness of the measures, the measures should also be included in the Laboratory's written policy to ensure their continued use.

This recommendation can be closed when we receive documentation that the Laboratory implemented a written policy prioritizing NDIS match confirmations that includes the timeframes that the Laboratory added to performance appraisals for both initiating the confirmation of matches and notifying investigators of those confirmed matches.



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