1 GOALS AND OBJECTIVES

The purpose of the SBI DNA Database Unit is to :

1.1 provide a repository for DNA specimens from convicted criminals pursuant to North Carolina General Statute §15A-266.

1.2 analyze samples from the specimens in the repository to develop their DNA profile for entry into the Combined DNA Identification System (CODIS) operated by the FBI.

The information contained in both the DNA Databank (repository) and the DNA Database (CODIS) will be used by SBI Agents assigned to the Molecular Genetics Section to solve violent crimes and in the identification of missing persons and victims of mass disaster.

2 OPERATIONAL MANUALS

Analysts assigned to the DNA Database Unit will have copies available of the following manuals and procedures, will read and understand their contents, and will abide by the rules and regulations of these manuals:

2.1 Molecular Genetics Section Quality Assurance Manual

2.2 Molecular Genetics Section Technical Procedures Manual

2.3 Molecular Genetics Section Administrative Orders Manual

2.4 Department of Justice and SBI Safety Manuals

2.5 SBI Crime Lab Procedures Manual

2.6 SBI Policy

2.7 NCSBI CODIS Standard Operating Procedures Manual

3 PROCEDURES FOR THE RECEIPT AND PROCESSING OF DNA SAMPLES IN THE DATABASE UNIT

3.1 SAMPLE ORIGIN

Samples will originate from the North Carolina Department Of Corrections (DOC) and local jail facilities throughout the state. All DNA samples will consist of a purple-top tube of blood. Individuals who must be drawn for inclusion in the DNA Databank are selected pursuant to General Statute §15A-266.

3.2 DOCUMENTATION

3.2.1 All notes and records generated by hand will be in ink.

3.2.2 The use of white out is prohibited.

3.2.3 Any errors made in recording data or any necessary changes that are made will be denoted with a single strike-through of the record which is then initialed by the individual making the change. The corrected entry will then be recorded as close to the original entry as possible.

3.2.4 The Database Unit processes samples in a batch format. For instance, approximately 90 samples may be simultaneously extracted and amplified in a single 96 well format. Our practice has been to assign a batch number to this work which is represented by the year followed by a sequential number, for example 01-14. This batch number will be located somewhere on all documents generated as part of that batch process, along with the date the document was produced and the initials of the person generating this record. Multi-page printouts from the Qiagen robotic workstations will be stapled together and the batch number, date and analyst's initials will be placed somewhere on the first page of these printouts. All records pertaining to the extraction and amplification batch run will all be placed together in a plastic sleeve protector.

3.2.5 Gel scans originating from this batch run are typically given an identifier traceable to the root batch number. For example it typically takes 5 gels to run all samples on PowerPlex 1.1 and an additional 5 gels to run all the samples on the loci associated with PowerPlex 2.1. Gels and their associated runs are identified as (01-1-14A through 01-1-14E and as 01-2-14A through 01-2-14E). The first two digits refer to the year, the next digit denotes a PowerPlex 1 or 2 run, the next two digits denote the root batch number, and the final letter the sequential gel identifier. Documents

associated with each gel produced are kept in a separate plastic sleeve liner. Each page of documentation will bear the gel identifier, date the document was produced and the initials of the originator somewhere on the document

3.2.6 Upon completion of a batch run, all the files associated with that batch will be placed in a manila file folder with the batch number on the tab. This file will be stored in the filing cabinets outside the DNA Database manager's office.

3.2.7 Any samples that require re-amplification or extraction will be kept in a new batch run file.

3.2.8 Because the Database Unit processes samples in a batch environment, most batch runs will be processed in some way by most of the members of the Database Unit. Therefore it is important that each analyst initial the records they initiate and make sure that the records conform to this administrative order. Those individuals doing second reads and verifications are sometimes required to make corrections on the records, which will be done by an initialed single-strike through of the incorrect entry, with the correct entry placed as close as possible to the correction. Analysts making additions to records generated (like those who have to verify the first and second reads match, should not only initial the form where required, but also date the entry.

3.3 RECEIPT OF DNA SAMPLES IN THE DNA DATABASE

3.3.1 DNA samples will be collected by the use of SBI approved kits. Although the kit used by the DOC and the local jails differ in appearance, the basic contents (the SBI DNA Database Collection Card and the purple top blood tube) are the same.

3.3.2 DNA samples can be received in the laboratory either in person or through the mail, parcel, or courier service

3.3.3 DNA samples from DOC will be accompanied by a DNA Database Sample Inventory Form (see Attachment #1) whether it is received in person or through the mail. If specimens are received in person, personnel will sign and date the chain of custody portion of this form and ensure that the correctional officer signs in the appropriate space. The original of this form will be maintained in the Database Unit files. Samples received from DOC through the mail will also be accompanied by a DNA Database

Sample Inventory Form which will be signed and dated by Database Analysts.

3.3.4 DNA sample kits from local jails are designed to be mailed in as individual packages. Kits from local jails will be logged in on the Local Jail Log form (see Attachment #2).

3.3.5 If a local jail submits a DNA sample kit in person to the laboratory, personnel will fill out a blank Local Jail Log Receipt form (see Attachment #2) and give a copy to the submitting officer.

3.3.6 Personnel will closely examine each individual sample received to see that:

3.3.6.1 The name and other identifying information on the DNA Database Collection Card is correctly filled out and that this information matches that on the label of the blood tube.

3.3.6.2 That the offense listed on the DNA Database Collection Card is an offense covered by NCGS § 15A-266.

3.3.6.3 Fingerprints on the information card are present and satisfactory (not smudged).

3.3.6.4 That the tube of blood is not broken, putrid, or contains an insufficient amount of blood for analysis.

3.3.6.5 The sample is then checked off its accompanying Inventory Form, after which a bloodstain will be prepared.

3.3.6.6 If there is a problem with any component of the DNA sample kit, this problem is referred to the DNA Database Manager for action.

3.3.7 DNA sample kits which exhibit problems during visual inspection will be dealt with by the Database Unit Manager or designee. If the DNA Database Collection Card exhibits no offense or an offense not covered by NCGS § 15A-266, or if a problems exists with the blood sample itself, the Database Unit Manager or designee will contact the submitting agency and get the problem rectified. If missing information or corrections need to be made to the DNA Database Collection Card, the Database Unit Manager or designee will initial and date the corrections. Even if the sample needs to be redrawn, a bloodstain

will be made and dried in a special location in the drying hood (Biological Safety Cabinet) and labeled as REDRAW. The Database Unit Manager or designee is responsible for seeing that the submitting agency is contacted and notified that the sample needs to be redrawn and tracking that the sample is indeed redrawn as requested.

3.3.8 If personnel determine that a sample was received in error (i.e. wrong GS), the bloodstain goes in the "Misfits" box under the drying hood.

3.3.9 If the DNA Database Unit Manager determines that a sample has been received from an individual not covered by NCGS § 15-266, he will fill out a DNA Sample Destruction Form. Samples will be destroyed by the Special Agent In Charge or designee and the destruction will be witnessed. Witnesses will initial and sign this form as well.

3.4 PREPARATION OF BLOODSTAINS

3.4.1 Liquid blood samples in purple top tubes are the only acceptable source for DNA from an individual for inclusion in the DNA Databank.

3.4.2 Liquid blood samples will be converted to bloodstains for inclusion in the DNA Repository in the following manner:

3.4.2.1 Upon receipt of the sample in the lab, the kits are checked off the accompanying Inventory Form.

3.4.2.2 Personnel will staple a pre-cut piece of S&S 903 paper to the inside panel of the DNA Database Collection Card. The S&S 903 paper will be initialed by the individual preparing the stain. The stains are then taken to the stain room by personnel for staining.

3.4.2.3 A separate bloodstain will be prepared on the FTA GeneCard. The offender's birth date will be written on the FTA card.

3.4.2.4 Personnel will check the identifying information on the DNA Database Collection Card with the identifying information on the blood tube in the sample kit. If they are in agreement, they are placed in the hood for staining. Only one card/tube set will be open in the hood at one time.

3.4.2.5 Personnel will place the S&S paper over a disposable plastic weigh

boat and using a clean disposable Pasteur pipette, transfer the blood from the tube to the paper.

3.4.2.6 The blood tube and pipette will be disposed of in a biohazardous waste bin.

3.4.2.7 The weigh boat and card will be left in the drying hood (Biological Safety Cabinet) until the bloodstain is dry or overnight.

3.4.3 When the bloodstain is dry, the S&S and FTA paper will be folded up into the DNA Database Collection Card with the FTA GeneCard.

3.5 LOGGING DNA SAMPLES INTO THE DNA DATABASE

3.5.1 Once the bloodstains are dry, the specimen will be entered on the DNA Database Sample Entry Computer.

3.5.2 Type the identifying information on the DNA Database Collection Card into the appropriate fields.

3.5.3 A unique bar code number will be assigned. Bar code numbers will be the full year designator, followed by a hyphen, and then a unique 5 digit number (e.g. 1994-00001 or 2000-00001).

3.5.4 A set of bar codes will be printed after completing each entry. The small bar code goes on the DNA Database Collection Card in the appropriate location, and the larger bar code goes on the outside of an Ultra Barrier Pouch. Place the bloodstain and the DNA Database Collection Card into the Ultra Barrier Pouch. The FTA GeneCard will also be labeled with the small bar code and the larger bar code will be placed on the smaller size Ultra Barrier Pouch.

3.5.5 The data entry program is located on the CODIS file server, which is backed up every day.

3.5.6 Data on this computer will be considered CONFIDENTIAL and dissemination of information on this computer to unauthorized personnel is misdemeanor as stated in NCGS § 15 A-266.

3.5.7 The bar code number of samples received from DOC is to be recorded on the DNA Database Sample Inventory form in the appropriate box as well as on the Local Jail Log form. Both of these forms will be retained in the

Database Unit files.

3.6 SAMPLE ENTRY INTO THE DNA DATABANK (REPOSITORY)

3.6.1 The bar code labeled Ultra Barrier pouch containing an individual DNA Database Collection Card and bloodstain is sealed using a vacuum heat sealer. A small desiccant package is to be placed in the Ultra Barrier pouch immediately before it is sealed. The smaller Ultra Barrier pouch containing the FTA GeneCard will not need a dessicant package prior to sealing.

3.6.2 Sealed pouches will be placed in the appropriate freezer in order of sequential bar code number. Sealed pouches containing the FTA GeneCard will be stored at room temperature in a locked cabinet in sequential order.

3.6.3 Specimens in the DNA Databank will be retained for a minimum of 50 years.

3.7 REMOVING SAMPLES FROM THE DNA DATABANK FOR ANALYSIS AND INCLUSION IN THE DNA DATABASE

3.7.1 Database Analysts will remove samples to be analyzed in sequential order of the appropriate set numbers.

3.7.2 The Ultra Barrier pouch will be cut open, and sufficient sample for testing will be removed for analysis. Analysts will use aseptic technique so that contamination does not occur. Only one Ultra Barrier pouch/sample will be open at any one time.

3.7.3 Database Analysts will be authorized to remove samples from the Databank for routine testing of samples for inclusion in the Database. Only enough sample will be removed for testing purposes. Any excess DNA extracted will be retained frozen and which may be used for retesting and quality control purposes at the direction of the Special Agent In Charge. The Special Agent In Charge may also direct Unit personnel to cut extra samples for the internal QC testing program. Removal of samples for any other purpose than designated above MUST only be done with the express approval and knowledge of the Special Agent In Charge.

3.7.4 After cuttings have been removed from the bloodstain for analysis, samples will be resealed in the Ultra Barrier pouch after adding a new

package of desiccant. In the event that a new Ultra-Barrier pouch needs to be used, a new bar code label will be generated and affixed to the pouch.

3.7.5 Resealed pouches will be replaced in the DNA Repository freezer in the same location where they were removed from.

3.8 ANALYSIS OF BLOODSTAINS TO DEVELOP DNA PROFILES

3.8.1 Samples will be processed using only approved technical procedures.

3.8.2 All lab notes and files will be kept in the DNA Database Unit files.

3.8.3 All gel scans will be closely checked by analysts before determining the genotype.

3.8.4 All STR results will be double read, and the DNA Database Manager and/or DNA Database Analyst II's will be the second reader at the time of CODIS entry and will upload the profiles to state and National Index.

3.8.5 Batch Samples

3.8.5.1 The Database Unit will processes samples in a batch format.

3.8.5.2 For example, 91 convicted offender samples are simultaneously extracted and amplified in a single 96 will format. One well is a negative extraction control and the other 4 wells are used for positive and negative amplification controls.

3.8.5.3 The current practice is to assign a batch number to this work which is represented by the year followed by a sequential number (i.e. 01-14)

3.8.5.4 Gel scans originating from a batch run will be given an identifier traceable to the root batch number. It typically takes 5 gels to run all samples on PowerPlex 1.1 and 5 gels to run all samples on PowerPlex 2.1. Gels and their associated runs are identified as (01-1-14A through 01-1-14E and as 01-2-14A through 01-2-14E. The first two digits refer to the year, the next digit denotes the particular PowerPlex 1 or 2 run, the next two digits denote the root batch number, and the final letter denotes the sequential gel identifier.

3.8.5.5 All sample, positive controls, and negative controls are extracted

and amplified simultaneously and are from one batch. The positive controls and negative controls are run on every gel. However, if one positive or negative control does not run on the gel as expected, the analyst does not have to re-run all the convicted offender samples, provided it is documented on other gels that the negative control or positive controls are correct.

4 LINES OF AUTHORITY AND RESPONSIBILITIES FOR INFORMATION AND SAMPLES IN THE DNA DATABANK AND DATABASE

4.1 The DNA Database Unit is one of the functional units in the Molecular Genetics Section. The Molecular Genetics Section is headed by a Special Agent In Charge.

4.2 The DNA Database Unit is composed of a Unit Manager and analysts.

4.3 The DNA Database Unit Manager is the Molecular Genetics Section designated CODIS Manager. He is assisted by DNA Database Analyst II's and team leader of the DNA Analysis Unit.

4.4 DNA Database Analysts have full authority to receive, run, and analyze the samples from convicted offenders received in the Database Unit. The only restrictions placed on this authority is to resolve problems with the samples received (this responsibility lies with the Unit Manager, but may be delegated to analysts) and to destroy samples received in error.

4.5 The DNA Database Unit Manager is responsible for the day to day operations of the unit and the time reports of all analysts within the unit. The Database Unit Manager is responsible for supervising the quality of the work entered into the local database, and for seeing that the Database Unit follows all quality assurance procedures found in the DNA Quality Assurance Manual. Work performance evaluations on analysts under the supervision of the DNA Database Unit Manager will be conducted by the DNA Database Unit Manager. The Database Unit Manager is also responsible for:

4.5.1 Maintaining the inventory of supplies within the Database Unit.

4.5.2 Requests for supplies will be coordinated with others within the Section assigned to handle order requests. All orders will be given to the Special Agent In Charge for approval.

4.5.3 Changes or amendments to the standard policy and procedures manuals which affect the DNA Database Unit will be suggested in writing to the

Special Agent in Charge.

4.6 The DNA Database Unit Manager (CODIS Manager) is responsible for the uploading of data from convicted offenders to the local, state, and national database indexes. All CODIS communications will be the responsibility of the CODIS Manager and his assistants and they will also be responsible for keeping the computer systems functional and secure. The only function not delegated to the CODIS Manager is the power to expunge a DNA profile. NCGS § 15A-266 allows for expungement of a DNA profile from the database via court order. It will be the responsibility of the Special Agent In Charge to determine when, and if a profile may be deleted from the database. For CODIS purposes, the DNA Database Manager is the CODIS Administrator and the Special Agent In Charge is the designated State Official.

4.7 The Special Agent In Charge is responsible for the overall management of the DNA Database and Databank and the integration of the resources and personnel into the entire Section. As needs require and time passes, additional responsibilities will be delegated to individuals within the Section. Any individual delegated to perform a specific duty does so with the full power and approval of the Special Agent In Charge.

5 SUBCONTRACTED SAMPLES

5.1 Preparation of Samples: Samples to be delivered to a contract laboratory will be aseptically cut and placed into individual coin envelopes. The envelopes will be sealed and the analysts initials will be placed across the seal.

5.2 Quality Control Samples/Re-analysis of Samples

At least 5% of all samples that will be sent to the vendor will be selected prior to shipment for separate analysis by either the vendor or the NCSBI Laboratory. The identity of these QC samples will only be known to the analysts at the NCSBI. The QC samples will be integrated into the samples provided to the vendor. The QC sample profiles will be compared to the original profiles generated during the original analysis of the QC samples.

5.3 Review of Data

5.3.1 All Data files from contractors will be reviewed for completeness. All documentation of analysis must be present including extraction sheets, amplification sheets, call sheets, gel scans and review sheets.

5.3.2 All gel scans will undergo a quality review to check for potential ladder problems, sample lane problems, control problems, and contamination.

5.3.3 A portion of the samples of each gel will be second read by a qualified DNA analyst for quality purposes.

5.3.4 All samples must be reviewed for quality as described above prior to being imported into CODIS.

5.4 Chain of Custody

Chain of Custody will be maintained and documented between the NCSBI and the contract laboratory.

6 ACCESS TO DATA AND INFORMATION

6.1 GENERAL OPERATING PROCEDURES

6.1.1 Access to information in the database and databank (including personal identifying information) is permitted only as specified in NCGS § 15A-266.8. All other requests for information will be denied. All requests for such information are to be deferred to the CODIS Manager or the Special Agent In Charge if the CODIS Manager is not available. The only exception to this rule, is that members of the DNA Database Unit may respond to requests from the Department of Corrections as to whether or not we have a sample of blood already on hand from a particular inmate.

6.1.2 Analysis files will not be removed from the laboratory except with prior approval (i.e., second reading of samples from the subcontractor).

6.1.3 The only persons permitted to provide information from the DNA Database to outside agencies are the CODIS Manager and his assistants, and the Special Agent In Charge.

6.1.4 The identity of any person/agency making a request for information MUST be verified prior to the release of any information. Requests made through the CODIS network (CJIS-WAN) will meet this requirement.

6.1.5 Requests for information will ONLY be accepted from law enforcement or criminal justice agencies, or governmental forensic science laboratories. Requests from private forensic laboratories will not be honored.

6.2 SEARCHING THE DATABASE: Searches of the database will be conducted ONLY by the analysts authorized to use CODIS.

6.3 MATCH CONFIRMATION PROCEDURES

6.3.1 If a CODIS generated match occurs between an offender and an unsolved forensic case the following steps will be followed:

6.3.1.1 The Special Agent In Charge will be notified immediately. The Special Agent In Charge will then notify the Assistant Director Of The Laboratory that a possible match has been detected. Specific information will be shared initially only within the laboratory.

6.3.1.2 The profile from the forensic case and the offender profile will be compared to determine if a match has occurred.

6.3.1.3 If the offender involved in the match resides in the State Database, the Special Agent In Charge, or designee, will retrieve the DNA Database Collection Card and bloodstain of that offender from the Databank. He will then take it to the Special Agent In Charge of the Latent Evidence Section who will have the thumbprint of the offender on the DNA Database Collection Card compared to the fingerprint of that offender in the SBI Identification Section or use the AFIS system (whichever he deems most appropriate).

6.3.1.4 Re-analysis of the offender sample from the state databank will be conducted IMMEDIATELY by the the Agent assigned to the case, the CODIS Manager or his designee.

6.3.1.5 When comparison of the profiles show that a DNA match is present, the re-analysis confirms the offender's profile, and that the thumb print on the offender's card have been confirmed, the Special Agent In Charge will notify the Assistant Director Of The Laboratory that a CODIS match has been verified.

6.3.1.6 The Special Agent In Charge and the CODIS Manager may decide that additional testing of the samples may be merited prior to notifying the investigating agency involved of a match.

6.3.1.7 If the match involves either a forensic or offender profile developed by another forensic lab, the verification procedures will be similar to those above, except that two agencies may share

portions of the verification procedures. The Special Agent In Charge will determine the appropriate path to take in consultation with the Unit Manager at the second laboratory.

6.3.2 Match confirmation between two forensic profiles will occur via direct comparison of the profiles produced for each case. The notification procedure will be similar to that described above.

6.4 REPORTING SEARCH RESULTS

6.4.1 REPORTS OF NON-MATCHES

6.4.1.1 The CODIS Manager or Agent assigned to the case should contact the requesting officer/agency by phone as soon as possible after a non-match is determined between an offender and forensic profile.

6.4.1.2 A formal written report of non-matches will be handled by the CODIS Manager or Agent assigned to the case using the standard laboratory report format.

6.4.2 REPORTS OF MATCHES

6.4.2.1 Prior to any reporting of a CODIS match between an offender and forensic profile occurs, the match must be confirmed as outlined in this document. Matches between forensic profiles will be confirmed as outlined in this document.

6.4.2.2 Also before the investigating agency is notified of a CODIS hit to an offender the following steps MUST be performed:

Contact the Department of Corrections (DOC) Diagnostic Office and determine if the offender is still in DOC custody; and if he is in custody, where he is located.

6.4.2.2.1 The lab MUST verify the offender has been convicted of a qualifying offense. To do this, the Special Agent in Charge, or his designee, MUST notify the SBI Intelligence Unit and request a complete criminal history of the offender. One MUST specify the date of offense of the case in question and have the intelligence analyst verify that the offender was not incarcerated on the date in question. If the offender is not in DOC custody, then ask the

intelligence analyst to provide and current address, employer, or phone information so the offender can be located. This material will be presented to the investigating agency at the time notification is made.

6.4.2.2.2 Ask the intelligence analyst to run the offender's name through NCIC.

6.4.2.2.3 Access the NC Department of Corrections web-site and pull up the offender's information. One can retrieve a full-color photograph of the offender along with descriptive information and a partial offense history. The access of information on this website is restricted to official law enforcement use only.

6.4.2.3 At the time all match verification procedures have been completed, the Special Agent In Charge will notify the investigating agency that a match has been detected by phone. In this conversation it will be stated that a written report from the CODIS Manager or the Agent assigned to the case will be forthcoming if the match is between two forensic cases

6.4.2.4 If the match is of an offender sample to a forensic unknown, then information will be relayed that this information may be used as probable cause to obtain a search warrant from the offender for a new blood sample.

6.4.2.5 The Special Agent In Charge of the appropriate Field District will be informed. If the case is not a Bureau case, the local agency will have to request limited assistance from the local SBI District Office, ONLY IF THE SBI FIELD OFFICE IS INTERESTED IN PARTICIPATING. That decision will be made by the SAC of the appropriate Field District.

6.5 That a search warrant will be prepared by the Special Agent In Charge of the Molecular Genetics Section, or designee, to obtain a blood, saliva, and hair samples from the suspect. The last paragraph of affidavit attached to the search warrant will contain the following sentence " That a reasonable level of force is permissible to obtain the evidence requested in this affidavit is herein authorized; should the individual named in the search warrant refuse to comply and cooperate with officers serving this warrant".

6.5.1 If the suspect is not incarcerated, that the investigating officer will locate the suspect and notify the Special Agent In Charge, or designee, as to the best time that a search warrant can be executed.

6.5.2 That after the new blood sample has been drawn from the offender, that it be resubmitted to the agent who worked the unsolved forensic case under the appropriate laboratory file number.

6.5.3 That upon receipt of the new blood sample in the laboratory, that this case will take IMMEDIATE PRIORITY and that every effort will be made to obtain results as soon as possible.

6.5.4 That when a confirmation of the match has been confirmed with the new blood sample, that a lab report will be sent forthwith to the investigating officer.

6.5.5 The agent serving the warrant will complete a Technical Field Assistance Form and have the Evidence Control Unit log it in at the time the SBI Suspect Evidence Collection Kit is logged in. This will allow the agent to issue a laboratory report on the assistance rendered in this case.

6.5.6 The agent who issues the laboratory report detailing the DNA match, will prepare an extra copy of the report for the District Attorney's Office. That agent will attach a cover letter to the District Attorney and personally mail it to the District Attorney of the appropriate jurisdiction. A copy of this letter will be attached to the administrative files in the laboratory case file folder.

6.5.7 The passage of the Innocence Protection Act by the North Carolina General Assembly requires that District Attorney's provide a copy of the DNA Laboratory Report revealing that there was a DNA match to the defendant that was derived from a CODIS match during a comparison search (NCGS § 15A-903 (g).

Revision History		
Effective Date	Revision Number	Reason
Unknown	00	Original Document
November 26, 2002	01	Procedure Update; Insertion of Outline; Page

		Number Change; Add Rev. # in Header
July 17, 2003	02	Change statement about use of CODIS Match for Probable Cause