

Procedure for Documentation and Review

1.0 Purpose - This procedure documents the requirements and guidelines for electronic note-taking, case file review requirements, and completion of Case Records using the Forensic Advantage (FA) system within the Forensic Biology Section.

2.0 Scope – This procedure applies to those Forensic Scientists in the Forensic Biology Section who perform analysis in body fluid identification and/or DNA analysis.

3.0 Definitions

- **Administrative documentation** - Materials associated with Case Records which do not include technical records but may include scanned copies of additional Request for Physical Examination of Evidence Forms, internal chain of custody documents, Forensic Scientist statement of qualifications (CV), notes and communication logs of case-related conversations, subpoenas and records of discovery, Sexual Assault Evidence Collection Kit papers, Subject Evidence Collection Kit papers, and other pertinent information which relates to the Case Record, but does not necessarily support the conclusions drawn.
- **Administrative Review** - An evaluation of the report and supporting documentation for consistency with Laboratory policies and for editorial correctness.
- **Case Record** - Unit of work within a discipline performed by a Forensic Scientist resulting in a single Laboratory Report or memorandum.
- **CODIS** – Combined DNA Index System.
- **Combined Probability of Inclusion (CPI)** - The probability that a random unrelated person would possibly be included as a contributor to an observed DNA mixture.
- **Electronic Record** - A data file that has information recorded in a form that only a computer can process.
- **Examination documentation** – Records of tests conducted, standards and controls used, diagrams, printouts, photographs, spectra, chromatograms, hand-written notes and other material used by the Forensic Scientist to reach a conclusion.
- **Forensic Advantage (FA)** - The lab wide computer software system used for documenting and storing data and reports generated for each case.
- **Form** - A document with a fixed arrangement of captioned spaces designed for entering and extracting information. Forms become a record once completed.
- **PopStats** - The computer program used to generate Random Match Probability (RMP) and CPE/CPI statistics.
- **Portable Document Format (PDF)** – A file format that preserves most attributes of a source document no matter which application, platform, and hardware type was originally used to create it.
- **Records** - Materials created or received by the Laboratory that are preserved as documentation of the activities of the Laboratory or for the value of the information. Records include but are not limited to reports, correspondence, telephone logs, quality records and technical records.
- **Technical records** - Accumulations of data and information which result from performing tests as specified in technical procedures. Technical records include, but are not limited to, forms, worksheets, photographs, and test reports.
- **Technical Review** – An evaluation of reports, notes, data, and other documents to ensure there is an appropriate and sufficient basis for the scientific conclusions.

4.0 Equipment, Materials and Reagents

- Computer with FA software

5.0 Procedure

5.1 Case Notes

5.1.1 All casework files shall be generated in such a manner that another trained Forensic Scientist can follow and understand all the steps taken during the analysis (including decision making steps).

5.1.2 Before a Forensic Scientist begins a procedure (e.g., rubbing for Kastle-Meyer, making a cutting for extraction, Phadebas or AP test or transferring a portion of a DNA extract for quantitation, amplification, or an electrophoretic run), a worksheet shall be created. Analysis shall be documented in the Forensic Scientist's worksheets as it is conducted. In the event of extenuating circumstances (e.g., court, FA/instrument issues, sick leave), Forensic Scientists shall complete the worksheets at the earliest opportunity.

5.1.3 If samples are to be reanalyzed at any step, that step of the process officially begins when the instrument is started. At that point, documentation shall be maintained in the Forensic Scientists' worksheet.

5.1.4 Case Record Object Repository - For each Case Record, the FA Case Record Object Repository shall include electronic versions of all notes or data generated during analysis of the case, including but not limited to the following information: the Forensic Scientist's most recent curriculum vitae, the case communication log, case notes generated during analysis (to include any amendments to case notes, as well as the original electronic copy), GeneMapper Projects, raw data from instrumentation, rescinded reports, photographs generated during examination, the expected results and statistical reference sheet, SDIS Specimen Detail Report, and kit forms contained in the sexual assault examination kit or subject evidence collection kit. For CODIS Hit Notifications, refer to the Forensic Biology Section Procedures for Casework Report Writing.

5.1.5 Forensic Advantage Forensic Biology Worksheet

5.1.5.1 In instances where the Forensic Scientist consumes the entire piece of raw material during analysis (e.g., swabs, cutting, etc.), a note shall be made in the comment section for the item on the sexual assault worksheet, unknown sample worksheet, or the DNA extraction page. If an item is consumed and no packaging remains, this shall also be documented in the chain of custody. If an item is not entirely consumed in DNA analysis, the amount of evidence consumed shall be documented.

5.1.5.2 For all worksheets in which results statements are generated, the automatically generated results statements may be modified so as to reflect results more accurately.

5.1.5.3 Main Page

5.1.5.3.1 Type of Analysis Requested – Each type of analysis performed as part of the Case Record shall be listed by choosing the appropriate option(s) from the drop down menu.

5.1.5.3.2 A sample description, including packaging, shall be included for each item assigned to the Case Record, including any items or sub-items created during analysis.

5.1.5.3.2.1 For each item, the item description, type of container, and condition of seal (sealed or unsealed) shall be listed.

5.1.5.3.2.2 For sub-items generated and consumed during analysis where no evidence container exists, the item description and a note stating the item was consumed in analysis shall be placed on the main page of the worksheet.

5.1.5.3.2.3 The item description on the main page may be changed to reflect the actual items of evidence within the container.

5.1.5.3.2.4 For multiple items contained within one convenience package (i.e., an outer box for mailing), the convenience container need be listed only for one of the items with a note stating which items were contained within the container.

5.1.5.3.3 Not Analyzed

5.1.5.3.3.1 For DNA analysis only cases, items not analyzed as part of the Case Record shall be designated by checking the Not Analyzed box next to Item Description.

5.1.5.3.3.2 For cases with body fluid examinations, the Forensic Scientist is not required to note which items are analyzed or not analyzed on the main page of the worksheet.

5.1.5.3.4 All standards not available – If all the DNA standards necessary to work the case are not available after communication and two weeks have passed, place a check mark in the box “all standards not available” and fill in the appropriate information in the automatically-generated statement to indicate which items are to be resubmitted when the DNA standards become available.

5.1.5.3.5 CODIS Hit Notification – For Case Records involving CODIS Hit notifications only, place a check mark in the box “Notification of CODIS Hit” and fill in the appropriate information in the automatically-generated statement. See the Procedures for CODIS.

5.1.5.4 Serology Tab

5.1.5.4.1 Cuttings and/or swabbings taken for DNA analysis

5.1.5.4.1.1 For body fluid identification cases only, all cutting and/or swabbings taken for DNA analysis shall be given a sub-item number.

5.1.5.4.1.2 For body fluid analysis and start to finish cases, the following statement shall be entered into the Results area for cuttings and/or swabbings which are taken: "A cutting or swabbing (sub-item number, if applicable) was taken from Item ____ for DNA analysis."

5.1.5.4.1.3 For body fluid analysis and start to finish cases, the following statement shall be entered into the Results area for cuttings and/or swabbings which are taken from items in which no chemical analysis was performed: "No chemical analysis for body fluid identification was performed on ____ (Item __); however, a swabbing (or cutting) (or sample) (sub-item number, if applicable) was taken for DNA (further) analysis."

5.1.5.4.2 Results for tests performed (to include results of quality control checks) that give a positive or negative result shall be documented as either positive or negative.

5.1.5.4.3 Quality control information shall be listed for each test performed, including the lot numbers of reagents used and the result of the quality control check for those reagents which require a quality control check.

5.1.5.4.3.1 If the same test is performed multiple times on the same day, the reagents and quality control check need only be listed once per page (i.e., Sexual Assault Tab and Unknown Sample Tab) with a note stating the same lot numbers and QC are used below (or above). The only exception is if a new batch of test is run (AP or RSID). If a new batch is run that require a new set of quality control information, then that set of quality control information shall be documented in the worksheet.

5.1.5.4.3.2 For sub tests (RSID), a comment indicating the results of the quality control check shall be added.

5.1.5.4.4 Overall results for test choices

5.1.5.4.4.1 For the Acid Phosphatase Test, Phadebas Test, Kastle-Meyer Test, and RSID test, the overall result shall be Positive if all of the test samples have a result of Positive.

5.1.5.4.4.2 For the Acid Phosphatase Test, Phadebas Test, Kastle-Meyer Test, and RSID Test, the overall result shall be Negative if all test samples give a Negative result.

5.1.5.4.4.3 For the Acid Phosphatase Test, Phadebas Test, Kastle-Meyer Test and RSID test, the overall results shall be Inconclusive if all test samples give an inconclusive result.

5.1.5.4.4.4 The overall result shall be left blank if all of the test samples do not have the same result.

5.1.5.4.5 Sexual Assault Worksheet

5.1.5.4.5.1 For body fluid cases and start to finish cases only, if a sexual assault evidence collection kit (SAEK) is analyzed, the contents of the kit shall be inventoried and each item shall be given a unique sub-item number and listed on the Sexual Assault worksheet. For SAEKs that are not analyzed, the kit need not be opened or inventoried and only the item number for the kit shall be listed on the Sexual Assault worksheet.

5.1.5.4.5.2 Only sub-items contained within the kit need to be listed on the sexual assault kit worksheet, the sexual assault kit itself does not need to be listed.

5.1.5.4.5.3 Hair packets received with an SAEK shall be given a sub-item number and a note shall be made on the main of the worksheet if the hair packet is attached to the outside of the SAEK.

5.1.5.4.5.4 If a cell with questionable morphology/appearance is observed during a microscopic examination, but the Forensic Scientist does not feel comfortable calling the cell a spermatozoa, the following note shall be added to the comment section for the microscopic exam: questionable cell.

5.1.5.4.5.5 Bloodstain Prepared- Mark yes for any item for which a bloodstain is prepared. The bloodstain shall be given a sub-item number and shall be listed under the appropriate sub-item. Mark “No” or “N/A” for all items which do not have a bloodstain prepared.

5.1.5.4.5.6 Test Choice – Choose the appropriate test choice from the drop-down menu for each item and test performed.

5.1.5.4.5.6.1 For each test performed, indicate the results obtained for that test for each sample tested and any overall result. See the Kastle-Meyer Test, Acid Phosphatase Test (Walker Test), and Saliva Testing procedures for results information.

5.1.5.4.5.6.2 For sub tests, indicate on which samples the sub test was performed.

5.1.5.4.5.7 Comments – If a swabbing or cutting is taken from the item for DNA analysis, indicate that a swabbing/cutting was taken, the area from which the swabbing/cutting was taken, and the sub-item number given to the swabbing/cutting.

5.1.5.4.5.8 Once all tests have been performed and documented, click the Generate Statement(s) button. The results statements are automatically generated based on the tests and results entered into the worksheet.

5.1.5.4.6 Subject Kit Worksheet

- 5.1.5.4.6.1** If a subject kit is analyzed by the Forensic Biology Section, the kit shall be inventoried and each item in the kit shall be given a unique sub-item number. For body fluid cases and start to finish cases subject kits that are not analyzed, the item number for the kit shall be listed on the Subject Kit worksheet.
- 5.1.5.4.6.2** Items submitted as part of the Subject Kit that require body fluid identification shall be listed on the Unknown Sample Worksheet
- 5.1.5.4.6.3** Only the sub-items contained within the kit need be listed on the subject kit worksheet; the subject kit itself does not need to be listed.
- 5.1.5.4.6.4 Type** – The type of item (e.g., bloodstain, cheek scraping, etc) shall be indicated.
- 5.1.5.4.6.5 Bloodstain Prepared**-Mark yes for any item for which a bloodstain is prepared. The bloodstain shall be given a sub-item number and shall be listed under the appropriate sub-item. Mark “No” or “N/A” for all items which do not have a bloodstain prepared.
- 5.1.5.4.6.6 Not Examined** – Indicate whether the item was not examined as part of this Case Record by checking the appropriate box.
- 5.1.5.4.6.7** If the item is to be examined during DNA analysis as a part of the same Case Record, the Not Examined box is to be left unchecked.
- 5.1.5.4.6.8** Once all items have been entered into the worksheet, click the button Generate Results. The results statements are automatically generated based on the information entered into the worksheet.

5.1.5.4.7 Known Sample Worksheet

- 5.1.5.4.7.1** For body fluid cases and start to finish cases only, each item submitted to the Forensic Biology Section as a DNA standard which does not first require body fluid identification, with the exception of items contained in the sexual assault examination kit or subject kit, shall be listed on the Known Sample worksheet. Items submitted as known DNA samples (i.e., alternate standards) on which body fluid identification is performed shall be listed on the Unknown Sample Worksheet.
- 5.1.5.4.7.2 Type** - The type of item (e.g., bloodstain, cheek scraping, etc.) shall be indicated.
- 5.1.5.4.7.3 Not Analyzed** – Mark the box for any item or any sub-items not being examined as part of this Case Record. If the item is to be examined during DNA analysis as a part of the same Case Record, the Not Examined box is to be left unchecked.
- 5.1.5.4.7.4** When all items have been entered into the worksheet, click the Generate Results button. The results statements are automatically generated based on the information entered into the worksheet.

5.1.5.4.8 Unknown Sample Worksheet

5.1.5.4.8.1 Items submitted for analysis to the Forensic Biology Section as unknown or questioned items shall be listed on the Unknown Sample worksheet under the following conditions:

- The item requires body fluid identification.
- For body fluid and start to finish cases, a swabbing or cutting is collected from the item.
- For body fluid and start to finish cases, the item is not being analyzed.

5.1.5.4.8.1.1 Test Choice - Choose the appropriate test choice from the drop-down menu for each item and test performed.

5.1.5.4.8.1.2 For each test performed, indicate the results obtained for that test for each sample tested and any overall result. See the Kastle-Meyer Test, Acid Phosphatase Test (Walker Test), and Saliva Testing procedures for results information.

5.1.5.4.8.1.3 For any sub tests that are performed, indicate on which sample(s) the sub test was performed and the QC results for that test in the comments section.

5.1.5.4.8.2 Comments – If a swabbing or cutting is taken from an item for DNA analysis, indicate that a swabbing/cutting was taken, the area from which the swabbing/cutting was taken, and the sub-item number given to the swabbing/cutting.

5.1.5.4.8.3 For containers which contain multiple items that are not listed in the overall item description, the contents of the container shall be listed.

5.1.5.4.8.4 Once all tests have been performed and documented, click the Generate Statement(s) button. The results statements are automatically generated based on the tests and results entered into the worksheet.

5.1.5.5 DNA Tab

5.1.5.5.1 If a Forensic Scientist chooses to batch analysis of multiple cases, then that Forensic Scientist shall list the case file numbers of the cases being batched on the respective analysis worksheet (extraction, quantitation, amplification, and/or electrophoresis). It is the responsibility of the Forensic Scientist and reviewers to check that there was no transfer of samples between cases.

5.1.5.5.2 When extraction tubes containing knowns, unknowns, and controls are being transferred back to the investigating agency, the set of tubes shall be assigned a new item number in FA. If this collection of tubes is resubmitted to the lab for re-analysis or there is an internal transfer after the generation of this new number, refer to the Section Procedure for Evidence Handling.

5.1.5.5.3 DNA Extraction Worksheet

5.1.5.5.3.1 Question and Known Samples – Record the item number(s), the negative control, type of extraction (for Knowns type “robot for samples & NegK”), date of the extraction, time the extraction was started, and the final volume of the extract (in µL).

5.1.5.5.3.2 QC Information – choose the appropriate lot numbers of all reagents used during the extraction from the drop down list.

- If subsequent extractions are performed using the same lot numbers of reagents, a note may be added stating the same reagents are used below (or above).
- If the particular reagent/instrument used is not available within the drop down list, note the reagent and lot number/instrument name in the notes.

5.1.5.5.3.3 Extracted with the following cases – type N/A.

5.1.5.5.3.4 Notes - If additional post-extraction processing is performed (e.g., the phenol-chloroform step is performed again or a sample is re-concentrated) record the item number, date of the additional analysis, type of additional analysis performed, and the final extract volume.

5.1.5.5.3.4.1 If a sample is diluted prior to the quantitation, note which samples are being diluted, what dilution is being made (e.g., 1:5, 1:10), and why the dilution was made.

5.1.5.5.3.4.2 For DNA only cases, if a swabbing or cutting is taken from an item for DNA analysis, indicate that a swabbing/cutting was taken, the area from which the swabbing/cutting was taken, and the sub-item number given to the swabbing/cutting.

5.1.5.5.4 DNA Quant Data Worksheet

5.1.5.5.4.1 Choose the appropriate instrument name used for the quantitation from the drop-down list and record the date the quantitation was performed.

5.1.5.5.4.2 QC Info – Choose the appropriate lot number for the Quantifiler Kit used from the drop down list. If subsequent quantitations are performed with the same lot number, a note may be added stating the same lot numbers are used below.

5.1.5.5.4.3 Notes

5.1.5.5.4.3.1 If the quantitation was batched with other cases, record the case numbers for the batched cases.

5.1.5.5.4.3.2 Make a note of any samples that exhibited possible inhibition according to the Quantitation Procedure.

5.1.5.5.4.3.3 If a quantitation is not being used for analysis (e.g., the instrument failed during the run or the standard curve did not meet the requirements according to the Quantitation Procedure), a note shall be made as to why the run is not being used. If any points were dropped during analysis from the standard curve(s), the specific point(s) dropped shall be documented.

5.1.5.5.4.3.4 If manual setup is performed, this shall be stated in the notes.

5.1.5.5.4.4 Quantitation data shall be saved in the Case Record Object Repository.

5.1.5.5.4.4.1 The quantitation PDF (7500 and QIAgility post run report) files shall be named so that they are easily recognizable as quantitation data in the Object Repository.

5.1.5.5.4.4.2 If multiple quantitations were performed as a part of the Case Record, the PDF quantitation results shall be given unique file names (e.g., quant data 1 and quant data 2 or quant data [date]).

5.1.5.5.4.5 Raw Data in the Case Record Object Repository

5.1.5.5.4.5.1 All quantitation raw data (7500 and QIAgility) shall be placed in the Object Repository and each raw data file (.eds file) shall contain information only for one case.

5.1.5.5.4.5.2 The raw data files shall be named such that they are easily identifiable as raw quantitation data in the Object Repository (e.g., 1_R201012345_1_raw quant data).

5.1.5.5.4.5.3 The raw data file, if generated, shall be placed in the Object Repository even if the run/experiment is not being used for further analysis and no data is being printed (i.e., the run/experiment is being repeated due to instrument failure or unacceptable standard curve).

5.1.5.5.4.5.4 If multiple quantitations were performed as a part of the Case Record, each raw data file shall be given a unique file name (e.g., “raw quant data 1” and “raw quant data 2” or “raw quant data [date]”).

5.1.5.5.5 DNA Amplification Worksheet

5.1.5.5.5.1 Amplifications – Choose the date the amplification was performed.

5.1.5.5.5.2 Choose the appropriate amplification type: Identifiler or Y-filer.

5.1.5.5.5.3 For manual setup, add all sample names to be amplified into the appropriate amplification table under the Sample heading.

5.1.5.5.5.4 For manual setup, in the DNA amount column for each sample, enter the appropriate amount of DNA to be added to the amplification based on the Dilution Calculation worksheet. The TE amount field is automatically populated after the DNA amount has been entered. Note: The amount of 9947A to be added will be determined based upon the QC results of each kit and will be provided by the Section Quality Control Officer.

5.1.5.5.5.5 Identifiler Kit Lot #/Y-filer Kit Lot # - Choose the appropriate amplification kit from the drop-down list.

5.1.5.5.5.6 BSA and Taq – Choose N/A from the drop-down list.

5.1.5.5.5.7 The individual master mix reagents (PCR reaction mix and primer) and 9947A Lot number are not required to be entered.

5.1.5.5.5.8 Add the thermal cycler number used for the amplification from the drop-down list.

5.1.5.5.5.9 **Amplified with the following cases** – If the amplification is batched with other cases, record the case numbers for the batched cases and write N/A if the case is not being batched for amplification.

5.1.5.5.5.10 **Notes** – If a sample is diluted prior to the amplification, note which samples are being diluted and what dilution is being made (e.g., 1:5, 1:10, 1 ng/μl).

5.1.5.5.5.11 For robotic setup, indicate the instrument name in the notes.

5.1.5.5.5.12 If amplification setup is performed on a liquid handler, the amp setup worksheet and the post run report shall be placed in the object repository.

5.1.5.5.6 DNA 3100 Data Worksheet

5.1.5.5.6.1 See the Forensic Biology Procedure for Genemapper ID for Casework for information that shall be added to the Object Repository for samples and/or runs that are not used for analysis.

5.1.5.5.6.2 **Instrument Name, Date, and Run Number** – Specify the instrument used for the run, the date the run was performed, and the run number(s) associated with that case for that run.

5.1.5.5.6.3 QC Info – Choose the appropriate lot numbers for the formamide, size standard, and ladder used for the run. If subsequent runs are performed using the same lot numbers, a note stating the same lot numbers are used below may be added.

5.1.5.5.6.4 For each 3130 run associated with the Case Record, the raw data shall be placed into the Case Record Object Repository along with the set-up worksheet.

5.1.5.5.6.5 To add the 3130 raw data to the Case Record Object Repository through the instrument network:

5.1.5.5.6.5.1 In order to put the 3130 raw data into the Object Repository, the folder shall be compressed. Each 3130 computer has a folder labeled Run Data (there should be a shortcut to this folder on the desktop).

5.1.5.5.6.5.2 Open the Run Data folder and select the appropriate run and right click. Go to Send To and choose the Compressed Folder option. A new, zipped folder appears at the bottom of the list. When there are multiple runs for the same case, each of the run folders can be highlighted and compressed into one zip file.

5.1.5.5.6.5.3 Rename the zip folder that has just been created with an appropriate file name (e.g., 1_case number_Case Record number_run number(s)).

5.1.5.5.6.5.4 Place the renamed zip folder into the Monitor folder (usually found on the desktop) so the data can be imported into the appropriate FA Case Record Object Repository through the instrument data network.

5.1.5.5.6.5.5 For runs that contain samples from multiple cases, the original run folder on the 3130 shall be copied so that each run folder in the FA Case Record Object Repository contains samples from that case only.

5.1.5.5.6.6 Make a copy of the run folder by right clicking on the appropriate run folder and choose copy, then right click and choose paste.

5.1.5.5.6.7 Open the copied folder and delete the samples that are not associated with the case, leaving only one case in the copied run folder.

5.1.5.5.6.8 The copied run folder can then be compressed, renamed, and transferred to the Monitor folder as described above.

5.1.5.5.6.9 If manual setup is performed, this shall be stated in the notes.

5.1.5.5.6.10 If the setup is performed on a liquid handler, the post run report shall be placed in the object repository along with the setup sheet.

5.1.5.5.7 DNA CODIS Worksheet

5.1.5.5.7.1 If a manual CODIS search has been performed according to the CODIS Procedure (with the exception of Employee Database searches), choose the appropriate box for either no investigative leads were obtained or investigative leads were obtained, and choose the appropriate item number from the drop-down list. The results of the manual CODIS search shall be reported in the Laboratory Report. If this search is a one-time only search, that shall also be stated in the report.

5.1.5.5.7.2 For CODIS entries of single source profiles or predominant profiles from mixtures, place a check mark in the box for samples being entered into the Database. Choose the appropriate item number from the drop-down list. In the comment box, type the Source ID (yes or no) and indicate whether the profile is partial (yes or no). Also select the appropriate Database the profile qualifies for (State only or State and National), as well as the profile type from the drop-down menu (e.g., forensic unknown, suspect) according to the Forensic Biology Section Procedures for CODIS.

5.1.5.5.7.3 When a suspect standard has been compared to a forensic unknown specimen, the Forensic Scientist shall update the Source ID of the specimen according to the Forensic Biology Procedure for CODIS.

5.1.5.5.7.4 For profiles being entered into CODIS as mixtures, check the box for mixture profiles being entered into CODIS and enter the appropriate information into the CODIS Mixture Worksheet according to the Forensic Biology Section Procedure for CODIS.

5.1.5.5.7.5 If all called alleles for a sample are not being entered into CODIS, a note stating which loci are being omitted shall be made.

5.1.5.5.7.6 Once the profile has been entered into CODIS, the Forensic Scientist shall export the SDIS Specimen Detail Report and add it to the Case Record Object Repository.

5.1.5.5.8 DNA Results Worksheet

5.1.5.5.8.1 Results

5.1.5.5.8.1.1 All unknown items on which DNA analysis was performed shall be accounted for on the DNA results worksheet with the appropriate result (e.g., Single Source Profile, Mixture Profile, etc.) and conclusion, including comparison to all known samples and unknown samples, according to the Casework DNA Interpretation Guidelines.

- 5.1.5.5.8.1.2** If the item number is associated with a differential extraction, indicate which fraction (sperm fraction or non-sperm fraction) the result and comparison applies to in the comment section for that item.
- 5.1.5.5.8.1.3** For DNA profiles that result in a match, choose either Full or Partial to indicate the appropriate result.
- 5.1.5.5.8.1.4** For DNA profiles with partial matches, the genetic markers that matched do not need to be noted.
- 5.1.5.5.8.1.5** DNA profiles that have the same result (e.g., Item 1 and Item 2 are both single source profiles with a match to Item 3) can be grouped together.
- 5.1.5.5.8.1.6** For DNA profiles in which a comparison is made to employee profiles according the Casework DNA Interpretation Guidelines, a note shall be made stating the comparison was made and to which employee profile(s) the comparison was made and the results of that comparison. The note shall also state the results of the comparison between unknown profiles and batched cases (both questioned and known profiles).
- 5.1.5.5.8.2** Statistical values that have been generated according to the Casework DNA Interpretation Guidelines shall be entered into the statistics portion of the worksheet.
 - 5.1.5.5.8.2.1** Choose either Popstats or CPI from the drop down menu based on the type of statistical analysis performed.
 - 5.1.5.5.8.2.2** For Popstats or CPI, the item number, name of the individual and item number to which the unknown DNA profile matched, and the statistical values that were generated shall be entered.
 - 5.1.5.5.8.2.3** For statistical values, the numerical values shall be listed to three significant figures. If the numerical value is between 1,000 and 9,999, the entire numerical value shall be listed (e.g., 1,111 would be written as 1,110).
- 5.1.5.5.8.3** Once all required information has been entered into the worksheet, click the button to Generate Result Statement(s).
 - 5.1.5.5.8.3.1** In the DNA extraction paragraph, fill in the appropriate information for which question samples (only the item number needs to be filled in) had DNA extractions and which known samples were extracted (both the name of the individual and the item number need to be filled in).

5.1.5.5.8.3.2 In the results section, add the item number(s) that apply(s) to each grouping above the appropriate results statements.

5.1.5.5.8.3.3 To the CODIS statement, add the item number(s) for any samples that are being entered into CODIS. If no samples are being entered into CODIS, indicate that no samples are being queried. If the sample being entered into CODIS is from a differential extraction, the fraction being entered shall be noted (e.g., sperm fraction or non-sperm fraction).

5.1.5.5.8.3.4 If no statistical analysis was performed, the population database statement shall be deleted.

5.1.5.5.8.3.5 For DNA analysis only cases, the following statement shall be entered into the Results area, above the DNA extraction paragraph: “No chemical analysis for body fluid identification was performed on ____ (Item __); however, a swabbing (or cutting) (or sample) (sub-item number, if applicable) was taken for DNA (further) analysis.”

5.1.5.6 Disposition/Result Worksheet Tab

5.1.5.6.1 Disposition

5.1.5.6.1.1 Disposition – Enter the appropriate disposition for each item contained in the worksheet from the drop-down menu.

For items being transferred directly to another Forensic Scientist, the name of the Forensic Scientist to whom the item is being transferred and the date of the transfer does not need to be noted.

5.1.5.6.1.2 If any of the items being returned include human remains, check the Human Remains box so that the human remains disposition statement is generated.

5.1.5.6.1.3 Once all appropriate information has been entered, click the Generate Disposition button to generate the correct disposition statement for the report.

5.1.5.6.1.3.1 For any disposition statement not populated automatically on the report preview, the appropriate disposition statement shall be added for it to appear on the report.

5.1.5.6.2 Review Report

5.1.5.6.2.1 A preview of the final report appears showing any statements generated in the individual worksheets which generate results. These results statements shall be combined so that each identical result and or/conclusion statement appears only once (i.e., all items that give chemical indications for the presence of blood are grouped together in the same result statement).

5.1.5.6.2.2 If hairs are present as part of the Case Record and those hairs are not being sent to the Trace Evidence Section for further analysis, the following statement shall be used: "This lab report details only the results of the serological examination of the case. The hair samples are being returned unanalyzed. All questions and inquiries concerning hair examination of this evidence should be directed to the Trace Evidence Section Forensic Scientist Manager."

5.1.5.6.2.3 The results and/or conclusions statements shown in the preview area shall be consistent with the statements shown on the Laboratory Report itself and in the individual worksheets; however, minor typographical errors or administrative errors (such as spacing or incorrect capitalization) may be corrected in the Report and need not be corrected within the worksheet itself.

5.1.5.6.2.4 For cases involving DNA analysis, the population database statement and CODIS statement shall be moved to the end of the results section.

5.1.5.7 Completed Tasks Tab - this tab is not used at this time.

5.2 Generating a Report for Casework

5.2.1 Once analysis has been completed on the case and all required information has been entered into the worksheet, a Laboratory Report is generated.

5.2.2 Laboratory Reports shall be issued on all cases that are analyzed and shall be prepared in accordance with the State Crime Laboratory Procedure for Reporting Results. All Laboratory Reports shall include:

5.2.2.1 Unique case identifier.

5.2.2.2 Description of the evidence examined (including the date the items were received and by whom).

5.2.2.3 Type of examination requested.

5.2.2.4 A description of the methodology (DNA).

5.2.2.5 The loci tested (DNA).

5.2.2.6 The results and/or conclusions.

5.2.2.7 An interpretative statement (DNA, either quantitative or qualitative).

5.2.2.8 Date report is released. The date listed on the Laboratory Report reflects the date the Laboratory Report was generated. Once all reviews are complete and approved, Forensic Advantage (FA) assigns the Report a pending release status. Once the Forensic Scientist releases the Report, this date is posted in FA as the release or issue date.

5.2.2.9 Disposition of evidence.

5.2.2.10 The electronic signature and title of the Forensic Scientist issuing the report.

5.2.3 In instances where a sub-item has been analyzed and the parent container is not a part of the Case Record, an additional statement shall be added to the item description under the "Item Submitted" header to reflect from which submitting agency item number the sub-item was created.

5.2.4 For cases involving DNA analysis, the Laboratory Report shall be checked out to add additional information:

5.2.4.1 The DNA results header information is to be changed to state: "DNA Results of Examination and Conclusions:"

5.2.4.2 The item number header information in the results section shall be formatted so that the header for each result grouping is both bold and underlined.

5.2.5 For cases involving both body fluid identification and DNA analysis, the body fluid identification and DNA analysis results shall be separated by adding an additional header. The body fluid identification results header shall be changed to "Body Fluid Identification Results:" and the DNA analysis results header shall be changed to "DNA Results of Examination and Conclusions." Proper header formatting shall be used so that both headers are consistent with the remainder of the report.

5.3 Review Guidelines

5.3.1 Procedure for Review of Outsourced Data

5.3.1.1 Prior to uploading or accepting data to upload to CODIS from any vendor laboratory, the DNA TL shall document prior approval of the technical specifications and/or the acceptance of ownership of the DNA data.

5.3.1.1.1 The DNA TL shall maintain the following documentation to ensure the vendor laboratory's:

5.3.1.1.1.1 Compliance with the FBI Quality Assurance Standards for Forensic DNA Testing Laboratories.

5.3.1.1.1.2 Compliance with the federal law accreditation requirements.

5.3.1.1.2 The TL shall maintain documentation of an on-site visit that occurred prior to the initiation of analysis by the vendor laboratory. The on-site visit shall be performed and/or accepted by the DNA TL, a designated employee of an NDIS-participating laboratory that uses the same technology, platform, and typing amplification test kit, or a designated FBI employee.

5.3.1.1.3 All data returned from a vendor laboratory shall be uploaded into the FA case object repository and approved.

5.3.1.1.4 A qualified analyst shall conduct a technical review of all of the vendor laboratory's data prior to uploading the data in CODIS.

5.3.1.1.5 A qualified analyst shall review, at a minimum, the following:

5.3.1.1.5.1 All DNA types to verify that they are supported by the raw and/or analyzed data.

5.3.1.1.5.2 All associated controls, ladders, and internal lane standards to verify that the expected results were obtained.

5.3.1.1.5.3 The DNA data to verify specimen eligibility and the correct specimen category for entry into CODIS.

5.3.1.1.5.4 The final report (if provided) to verify that the results/conclusions are supported by the data and that each tested item (or probative fraction) is addressed.

5.3.1.1.6 The casework Forensic Scientist performing the technical review of the vendor data/report shall issue a report stating whether or not a sample has been searched/entered into CODIS (see Procedure for Casework Report Writing).

5.3.1.1.6.1 The search/entry of a DNA profile in the CODIS database implies acceptance of ownership of the DNA data.

5.3.2 Casework Review Guidelines

5.3.2.1 Technical Issues: If during the course of a review, the reviewer and case Forensic Scientist are unable to resolve a technical issue, the appropriate (Body Fluid and/or DNA) technical leader shall be notified of the issue by the case Forensic Scientist. The technical leader shall then determine and/or approve the appropriate course of action to be taken.

5.3.2.2 Discrepant Conclusions: If a situation arises where the conclusions of a profile are not a consensus of the case Forensic Scientist, the technical reviewer, and the combined technical/administrative reviewer, then the more conservative approach shall be taken and the comparison deemed no conclusion and/or the profile deemed un-interpretable.

5.3.2.2.1 During a case review, the case Forensic Scientist, technical and combined reviewers and the DNA Technical Leader shall reach a consensus of the profile being un-interpretable.

5.3.2.3 Technical Reviews

5.3.2.3.1 All data, test results, and reports shall undergo a technical review by a second qualified Forensic Scientist. All profiles shall undergo a technical review prior to entry into CODIS. The Forensic Scientist conducting the technical review shall ensure the data, testing methods and results, the interpretation, and reports meet State Crime Laboratory policy.

5.3.2.3.2 The technical review shall be scheduled in FA to the Forensic Scientist performing the review.

5.3.2.3.3 If a question arises concerning a result/conclusion, the technical reviewer shall have contact only with the Forensic Scientist of record and/or the Forensic Scientist's supervisor, the Section Manager, the Technical Leader and the combined reviewer.

5.3.2.3.4 The technical reviewer shall document approval of the notes and Report when the standards are met. Both Forensic Scientists shall agree on the interpretation of the data to be reported.

5.3.2.3.5 The technical review for body fluid cases shall address the following:

5.3.2.3.5.1 Notes present and accurate.

5.3.2.3.5.2 Communication Log present.

5.3.2.3.5.3 All scanned pages numbered and initialed.

5.3.2.3.5.4 Request for Physical Examination of Evidence Form present and correct. Check for additional analysis requests (e.g., firearm, latent, etc.).

5.3.2.3.5.5 Report matches dates, numbers, and names on the SBI-5.

5.3.2.3.5.6 Proper tests run.

5.3.2.3.5.7 Proper controls run.

5.3.2.3.5.8 Appropriate conclusions obtained.

5.3.2.3.5.9 Administrative records properly scanned.

5.3.2.3.5.10 Chain of Custody reviewed in Forensic Advantage.

5.3.2.3.5.11 Report is accurate and complete.

5.3.2.3.5.12 All required documentation present in the FA Case Record Object Repository.

5.3.2.3.6 The technical review for DNA cases shall address the following:

5.3.2.3.6.1 Read the Request for Physical Examination of Evidence Form and communication log.

5.3.2.3.6.2 Compare the Request for Physical Examination of Evidence Form request to the main page and extraction page of FA to determine proper analysis.

5.3.2.3.6.3 To ensure completeness, perform a thorough review and comparison of the Object Repository and hard copy notes to include: allele call table, R^2 values, slope, allelic dropout, artifacts, presence of proper photographs, call tables from referenced samples, electronic files, population form from U.S. Census Bureau World Population Clock, intelligence report (if a standard was submitted as part of a CODIS hit), information generated during CODIS hit confirmation has been shared, etc.

5.3.2.3.6.4 A thorough review of all hard copy notes, worksheets, projects, and electronic data (or printed electropherograms/images) to include lot numbers, batching, dates, instruments, etc.

5.3.2.3.6.4.1 Review shall include verification that all appropriate time frames specified in the applicable DNA Casework procedures are satisfied.

5.3.2.3.6.4.2 Review shall include verification of the comparison between unknown profiles and appropriate samples to include employee profile(s) and batched cases (both questioned and known profiles).

5.3.2.3.6.5 A review of all DNA types to verify that they are supported by the raw or analyzed data (electropherograms or images).

5.3.2.3.6.6 A review of all profiles to verify the correct conclusions and exclusions (if applicable) as well as a review of any un-interpretable results in accordance with the STR Interpretation Guidelines.

5.3.2.3.6.7 A review of all controls, internal lane standards, and allelic ladders to verify that the expected results were obtained.

5.3.2.3.6.7.1 Negative controls.

5.3.2.3.6.7.2 Positive controls.

5.3.2.3.6.7.3 Ladders.

5.3.2.3.6.7.4 Internal lane standard (LIZ) printout including the 250 base pair peaks.

5.3.2.3.6.8 A review of statistical analysis, if applicable.

5.3.2.3.6.9 Perform a secondary interpretation.

5.3.2.3.6.10 A review of the final Report:

5.3.2.3.6.10.1 Verify that the results and/or conclusions are supported by the data.

5.3.2.3.6.10.2 Confirm the Report, disposition page, and results page are all in agreement.

5.3.2.3.6.10.3 Review the disposition for accuracy.

5.3.2.3.6.11 For profiles marked for entry into CODIS, verification of eligibility, correct DNA types, correct specimen category, source ID, partial profile yes/no for each sample, and any loci that are not to be uploaded for a partially predominant profile have been verified.

5.3.2.3.6.12 Verification that all profiles marked for entry into CODIS are eligible, have the correct DNA types and correct specimen category.

5.3.2.3.7 The technical reviewer has two options based on the review:

- Approve the review, or
- Return the review with comments. These shall be placed in the dialogue box in FA. Document changes required by policy. Also document suggestions, but list as optional.

5.3.2.3.8 If the review is returned, all issues shall be resolved prior to approval in FA

5.3.2.3.9 Confirm any changes that occur based on the combined review.

5.3.2.3.10 The technical review is considered to be complete when the technical reviewer has approved the review and all applicable technical review questions have been answered affirmatively.

5.3.2.3.11 Once the technical review has been approved, schedule the combined review in FA.

5.3.2.4 Combined 2nd Technical and Administrative Review for Body Fluid and DNA Casework Units

5.3.2.4.1 A combined review of the case file shall be completed by a qualified Forensic Scientist and the review shall be documented in FA. The combined review shall not be conducted by the technical reviewer.

5.3.2.4.1.1 Note: stop work, CODIS Notification, and preservation of evidence cases shall have a combined technical/administrative review completed by a qualified Forensic Scientist.

5.3.2.4.2 Schedule the combined review in FA to the Forensic Scientist performing the review.

5.3.2.4.3 The combined reviewer shall ensure the following:

5.3.2.4.3.1 The DNA profiles searched and/or entered into CODIS have been entered and/or searched accurately.

5.3.2.4.3.2 Check all photographs for case number, initials, item number, date, focus, clarity, and absence of background clutter.

5.3.2.4.3.3 Check all case notes in repository for page number, case number, Forensic Scientist initials, and date (exception: print2pdf documents).

5.3.2.4.3.4 FA Worksheets – compare dates with items in the Object Repository, general review of pages to see that they are filled in properly, and confirm interpretations.

5.3.2.4.3.5 Read report for grammar: names and items in the body of the report match the submission information, etc.

5.3.2.4.3.6 Compare the Case Record chain of custody to the Report for completeness and accuracy.

5.3.2.4.3.7 Comparison of [Request for Physical Examination of Evidence Form](#) to header: the information on the [Request for Physical Examination of Evidence Form](#) shall match if present, unless other documentation exists. Check for additional analysis requests (e.g., firearm, latent, etc.).

5.3.2.4.3.8 SDIS Specimen Detail Report worksheets shall be compared to the allele call table for accuracy, correct Specimen ID number, correct specimen category, correct source ID, partial profile yes/no, and correct loci were uploaded (for partially predominant profiles or profiles with obvious allele dropout).

5.3.2.4.3.9 Check that mixture verification has been completed.

5.3.2.4.4 The combined reviewer has two options based on the review:

- Approve the review (no comments allowed, since the case is finalized once the administrative review is complete).
- Return the review with comments. These shall be placed in the dialogue box in FA. Document changes required by policy. Also document suggestions, but list as optional.

5.3.2.4.5 If the review is returned for reasons that result in changes to results/conclusions, interpretation, or results in additional work being performed, the case file shall be returned to the technical reviewer for approval of changes with subsequent approval by the combined reviewer.

5.3.2.4.6 If a question arises concerning a result/conclusion, the combined reviewer shall only have contact with the Forensic Scientist of record and/or the Forensic Scientists' supervisor, the Section Manager, the Technical Leader and the technical reviewer.

5.3.2.5 Verification Reviews: Verification reviews shall be completed under the following circumstances and the verification review shall be completed prior to approval by the administrative reviewer:

5.3.2.5.1 If an item of evidence within a container varies significantly from the evidence description listed on the Request for Physical Examination of Evidence Form, to include evidence not contained and additional evidence from what is described on the Request for Physical Examination of Evidence Form.

5.3.2.5.2 If DNA extracts are to be analyzed and created as sub items in FA.

5.3.2.5.3 If only one sperm is observed on a slide according to the Forensic Biology Procedure for Sperm Identification, that spermatozoon shall be verified by another Forensic Scientist and a verification review shall be scheduled in FA.

5.3.2.5.4 A verification review shall be performed by the CODIS Administrator for any search warrant affidavits prepared based on a CODIS Hit.

5.3.2.5.5 Mixture profiles being entered into CODIS

If the SDIS Match Estimator results exceed the threshold for match rarity, the CODIS Administrator shall perform a verification review after the technical review is completed. The mixture profile shall be verified and approved by the CODIS Administrator prior to upload into CODIS.

If the CODIS Administrator is not available, the verification review shall be assigned to the CODIS Assistant Administrator or the DNA Technical Leader.

For mixture profiles that have a predominant or partially predominant profile to be uploaded, a verification review by the CODIS Administrator shall not be performed.

5.3.2.6 CODIS Hit Notifications

5.3.2.6.1 For In-State Notifications

5.3.2.6.1.1 Technical/Administrative Review

5.3.2.6.1.1.1 Review the match detail report.

5.3.2.6.1.1.2 Compare the match detail report to the profile generated during in-house analysis of the convicted offender.

5.3.2.6.1.1.3 Verify the presence of supporting documentation generated during the in-house CODIS Hit confirmation in the object repository. This shall include all files contained in the Case Record associated with the CODIS Hit Confirmation.

5.3.2.6.1.1.4 Verify the presence of the Subject Information Assessment (SIA) in FA.

5.3.2.6.1.1.5 Review the report.

5.3.2.6.2 For Out of State Notifications

5.3.2.6.2.1 Technical/Administrative Review

5.3.2.6.2.1.1 Review the match detail report.

5.3.2.6.2.1.2 Look for the presence of the confirmation letter from the out of state agency in the Case Record Object Repository.

5.3.2.6.2.1.3 Confirm the match detail report has been scanned into FA.

5.3.2.6.2.1.4 Review the report.

6.0 Limitations – N/A

7.0 Safety – N/A

8.0 References

Procedures for CODIS

Forensic Biology Section Procedure for Evidence Handling

Forensic Biology Section Procedure for Photographing Evidence

Forensic Biology Section Procedure for Casework DNA Interpretation

Forensic Biology Section Procedure for Blood Analysis

Forensic Biology Section Procedure for Saliva Analysis

Forensic Biology Section Procedure for Semen and Sperm Analysis

Forensic Biology Section Procedure for Quantitation with Quantifiler Duo

State Crime Laboratory Quality Manual

State Crime Laboratory Procedure for Record and Data Management

State Crime Laboratory Procedure for Reporting Results

State Crime Laboratory Procedure for Reviewing Laboratory Reports

State Crime Laboratory Procedure for Evidence Management

State Crime Laboratory Procedure for Use of FA

9.0 Records

- Abbreviation List
- Signature Log

10.0 Attachments – N/A

Revision History		
Effective Date	Version Number	Reason
09/17/2012	1	Original Document
10/26/2012	2	5.3.5.5.7.1 - added reporting requirements for manual CODIS search
12/07/2012	3	5.6.1 - added guidelines for review of subcontractor data
01/03/2013	4	Definitions – added “unrelated” to CPI definition and “CPE/CPI” to Popstats definition; 5.3.5.5.4.3.3 – removed requirement to add additional information to OR (moved to quant procedure); 5.3.5.5.4.4 – reworded sentence; Removed 5.3.5.5.4.4.3 thru 5.3.5.5.4.4.7; 5.3.5.5.4.5.1 – removed references to 7000; 5.3.5.5.4.5.3 – added unacceptable standard curve as reason; Removed 5.3.5.5.4.5.5 (and subsections) and 5.3.5.5.4.5.6; 5.3.5.5.5.4 – Added requirement to get 9947A amount for amplification from QCO for each lot; 5.3.5.5.5.6 – added Taq to N/A list; 5.3.5.5.5.7 – removed Taq; 5.3.5.5.5.10 – added “1 ng/ul” as example; Removed note from 5.3.5.5.6.1, replaced with note previously listed as 5.3.5.5.6.1.1; 5.3.5.5.8.1.1, 5.3.5.5.8.1.6, 5.3.5.5.8.2 – updated name of STR Guidelines; 5.3.5.5.8.2.2 – added “CPI”; 5.3.6.3.5 – reorganized parenthetical, corrected 9947”A” ; 5.6.2.4.6 – changed wording from “any change” to “technical changes”; Removed 5.6.2.5.3; References – updated procedure names
03/08/2013	5	5.3.5.5.8.1.6 and 5.6.2.3.7.4.2 – clarified requirement to check unknown profiles against batched case samples (both questioned and known samples)

03/22/2013	6	5.2.1 through 5.2.3, 5.2.6 through 5.2.7, 5.3, 5.3.4.1 through 5.3.4.3 – removed (language included in lab wide procedures); 5.3.5.5.4.3.3. – added requirement to note points dropped; 5.3.5.5.4.4, 5.3.5.5.7.6, – removed Print to PDF; 5.6.2.2, 5.6.2.2.1, 5.6.2.2.3, 5.6.2.3.11, 5.6.2.3.12, 5.6.2.4, 5.6.2.4.4, 5.6.2.4.5, 5.6.2.4.6 – changed administrative review to combined technical/administrative review; removed 5.6.2.3.5; 5.6.2.4.1.1 – added CODIS notification and preservation of evidence to note; 5.6.2.4.3.1 – added review for search; 5.6.2.4.3.9 – removed verification review for un-interpretable profiles; 5.6.2.4.5 – clarified reasons for required additional technical review; 5.6.2.5.5 – clarified requirement for mixture verification review; 5.6.2.6 – combined technical and administrative reviews; 5.6.2.7 – removed, added Lab procedure for Use of FA to references
09/25/2013	7	Header – added issuing authority; 5.1.5.3.2 – updated procedure name; 5.1.5.5.1 – added extraction to list; 5.1.5.5.3.1 – added notes for knowns extraction; 5.1.5.5.3.2 – added notes required to add instrument/reagent; 5.1.5.5.4.3.4 – added note for manual quant setup; 5.1.5.5.4.4.1 – added post run report; 5.1.5.5.4.5 – added QIAgility; 5.1.5.5.5.3, 5.1.5.5.5.4, 5.1.5.5.6.9 – added manual setup, 5.1.5.5.5.11, 5.1.5.5.5.12 and 5.1.5.5.6.10 – added robotic setup; 5.4.1 – updated procedure for review of outsourced data; 5.4.2.6.1.1.4 – updated name of intelligence report to SIA; 5.4.2.6.1.1.5 and 5.4.2.6.2.1.4 – removed phone log
12/18/2013	8	5.1.5.3.5, 8.0 – removed FB Section reference; 5.1.5.4.4.2 – removed “-“ as option; 5.1.5.4.5.6.1, 5.1.5.4.8.1.2 – removed phadebas; 5.1.5.4.5.8 – removed requirement for creating sub-item for slides; 5.1.5.5.2 and 5.1.5.5.3 – removed (referenced in Section Evidence Handling); 5.1.6, 5.1.7, 5.3, 5.4.3 – removed section (Database use only); removed references to SBI-5