



Quality Division Use Only

Quality Tracking #:	2018-IA-09	Classification:	Corrective Action
Non-Conformance Level:	Class I	Section:	Biology/DNA
Date of Discovery:	1/12/2018	Date of Incident:	1/12/2018

Forensic Case Number(s), if applicable:	Agency Case Number(s), if applicable:
See Attached List of Cases	See Attached List of Cases

Description of Non-conformance:

Analysts were not following the NDIS procedures for entering profiles with obligate alleles into the CODIS software. Obligate alleles are alleles in a mixture that can reasonably be assumed to have come from the alleged suspect in a crime. Incorrect application of obligate allele designation in a given CODIS entry could potentially minimize the number of candidate matches received due to the way profiles are searched within the CODIS software.

Additional Information/Follow-Up:

The CODIS software allows CODIS users to designate obligate alleles at each locus, as appropriate. It is each CODIS user's responsibility to properly designate which loci require the use of obligate alleles and which alleles need to be obligated. Mixture and partial profiles are searched at moderate stringency with no allowance for mismatches. Therefore, if a sample was entered as 10+,11 and the candidate profile contained a 10,11 this would result in a high stringency match. If a sample was entered as a 10+,11 and the candidate profile contained a 10 this would result in a moderate stringency match. Lastly, if the candidate profile was 10,12 this would result in a low stringency match and thus not be flagged as a potential candidate match.



Actions Taken:

A conference call was held with the State CODIS Administrator and the National CODIS Custodian in order to confirm the appropriate means of entering mixtures with obligate alleles into the CODIS software. Based on the recommendation of that conference call, ten CODIS computer-based training modules were mandated for all HFSC CODIS users to complete. This training exists within the CODIS software and was available for all CODIS users, but not previously required as part of their training to be CODIS users. The documentation of completion is maintained within the CODIS software and this training has been incorporated into the analyst training program for all new CODIS users. Forensic Biology management and the Quality Division then determined that an audit of previous casework would be done in order to identify previously entered profiles with incorrect obligate allele designations. The CODIS Help Desk was contacted in order to aid in the design of a query for all potentially mis-entered profiles. The query identified 1,280 profiles that contained obligate alleles and had the source ID defaulted to "No" indicating that the profile had not been associated with a known reference sample. The CODIS Administrator contacted representatives from the impacted divisions within the Houston Police Department and informed them about the review of previously entered CODIS profiles and confirmed eligibility information, when necessary. The State CODIS Administrator provided in-house training to HFSC analysts on March 28, 2018 regarding proper CODIS entry of obligate allele profiles, best CODIS practices and SWGDAM's role in interpretation versus CODIS tasks. Weekly DNA report writer meetings were established to allow for discussions regarding DNA interpretation/CODIS entry. The current CODIS Administrator also provided training on the correct application of obligate alleles for CODIS entries of mixture and/or partial profiles. All DNA report writers were then required to complete a knowledge demonstration quiz to document their understanding of the appropriate usage of obligate alleles during CODIS entry. Due to the magnitude of this nonconformance and the volume of profiles requiring review, specific checklists and process workflows were created and communicated to the DNA report writers. The DNA report writers were assigned cases to review and all potential modifications to CODIS entries were then reviewed and approved by the CODIS Unit. All of the 1,280 profiles identified in the query were subsequently reviewed and the audit was completed in April 2021. Of the 1,280 profiles reviewed, 1,060 profiles were modified and 220 profiles were determined to not require modification. Overall 121 profiles resulted in at least one hit after modification. In addition 53 profiles were subsequently removed from CODIS. HFSC acknowledges that CODIS associations may still occur as additional profiles from other laboratories are continuously being entered; however, the provided metrics were current as of July 2021. Ongoing audit updates were provided to the DNA report writers throughout the span of the audit. All case-specific communications are documented within the applicable case record.



Summary of Root Cause Analysis:

Note: Incidents are documented for tracking purposes and trend analysis. Root Cause Analysis is not required for incidents.

There were two contributing factors identified as root causes for this nonconformance: a disconnect between the former CODIS Administrator and the CODIS community's standard practices, and the laboratory's CODIS functions residing solely with one individual.

Disconnect from the CODIS Community

The Forensic Biology section did not have a clear understanding of search stringencies within the CODIS software for mixture and partial profiles or how the incorrect application of an obligate allele in a CODIS entry could directly affect the potential candidate match returns. Profile entry instructions were historically communicated to the section by the technical leader at the time the laboratory began entering profiles into CODIS. The laboratory's practices were never updated even as software updates were made in the CODIS software. The proper way to enter profiles into the CODIS software has been communicated at the national level, however the previous HFSC CODIS Administrator was not aware that obligate alleles were being misused at HFSC even though she attended all of the required CODIS meetings, had continuous communication with the SDIS Administrator and had access to all CODIS computer-based training modules. The former CODIS Administrator is no longer employed by HFSC and is, therefore, unavailable for interview.

Need for Oversight

The former CODIS Administrator performed all CODIS-related tasks and functions while she held the position. This isolated existence prevented Forensic Biology management from having any oversight into her routine practices, evaluating her effectiveness and ensuring that she was operating under the most current guidance from NDIS. A Lean Six Sigma CODIS project occurred between March through September 2018. This improvement project established role clarity in the CODIS Unit, expanded the CODIS Unit to include a full-time CODIS Administrator, two full-time Assistant CODIS Administrators, a part-time CODIS back up position and an administrative CODIS liaison. This increased capacity in the CODIS Unit allows for multiple layers of review for profile entries (including the appropriate use of the obligate allele) and candidate match resolution. The CODIS Unit also created a stand-alone SOP and incorporated standardized procedures for the entering of forensic mixtures and partial profiles. The SOP includes information on the search stringencies in the CODIS software. It also provides examples of how different CODIS entries will be searched and the potential outcomes of each search depending on the specific CODIS profile entry. The SOP also outlines all optional specimen categories, hit dispositions and routine tasks performed by the CODIS Unit. This information had been previously undocumented and therefore did not allow for transparency or oversight.

Section Manager: Courtney Head
Peter Stout (on behalf of Amy
Division Director: Castillo)

Date: 10/26/2021
10/28/2021

Incidents or Corrective Actions that involve the Biology/DNA section are reviewed by the Technical Leader and CODIS Administrator.



Houston Forensic Science Center
Incident/Corrective Action Report
Quality Division

Technical Leader: Cheron Maxwell

Date: 10/14/2021

CODIS Administrator: Jennifer Clay

Date: 10/8/2021

Quality Director: Erika Ziemak

Date Closed: 10/29/2021

List of Cases for Corrective Action Report 2018-IA-09

FCN	ACN
L05-10430	095794105
L05-06826	164270304
L06-08001	075689906
L06-06001	049581806
L06-08442	079742306
L06-10201	089029306
L06-01178	011844706
L06-06944	004301806
144210704	144210704
L05-16246	183105605
L05-00531	122130604
L05-06825	067251605
L05-03605	019256005
L06-05283	007852306
L06-15322	144328406
L06-10746	087738106
L06-15318	091531506
L06-12481	056103406
L06-12479	058984506
L01-05943	015825540
131646206	131646206
L06-12482	116503206
L06-05998	36442806
L05-11169	121778405
L05-10367	74958305
L05-10370	114134105
L93-10871	117210993
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L06-10271	072228392
L06-13807	068957306
L04-14955	160283004
L05-13939	060698805

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L05-13941	155317705
L05-13944	137828705
L05-13951	153262305
L06-18078	111337906
L07-02375	014458007
L06-06592	060224106
L06-14387	136439806
L07-04362	027038807
L06-19296	172167006
L05-14222	128323405
L95-9312	100589295
L05-02658	047779604
L06-18095	167326706
L07-14613	088042507
L07-09306	068065607
L07-01170	002762607
L06-19901	158822706
L07-04722	156402006
L07-03971	017790507
L07-06820	088860906
L07-05537	039158207
L07-06810	040524188
L07-12264	092971707
L07-21857	166403007
L08-01115	133931007
2019-00945	014766006
L07-06223	035081907
L07-08575	058227207
L07-08227	047175907
L07-08883	148555906
L07-08574	057012407
L07-10148	073406607

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L07-12258	074886307
L07-23159	138602707
L07-12115	063847207
L07-17694	100108207
L07-07495	051505507
L08-05656	017529208
L08-05666	046559091
L08-04342	020343008
L08-04337	000805908
L08-09500	050308708
L08-10328	004453108
L08-11796	155254007
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L07-08552	120097006
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L08-10358	062385908
L07-14622	106545007
L07-13813	089678607
L07-08199	037063097
L07-16865	126229807
L08-1989	152194999
L07-10139	058402407
2014-18852	073867184
L08-04357	018532908
L07-15605	035446107
L05-2233	138003204
L08-06828	040602208
L08-24478	154007698
L08-14000	086019508
L08-10347	050981408
L81-1856	013071981
125997208	125997208

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L09-16957	128903309
009274709	009274709
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108335207	108335207
008883208	008883208
012511608	012511608
145679507	145679507
185088607	185088607
036788308	036788308
L09-11919	120791793
L09-10900	131187503
L08-09089	050869808
L08-07885	046098108
L08-09098	054970708
L08-10344	048426108
L08-10340	041766508
L08-09499	046107108
L09-18292	055010409
L09-15363	069017009
L07-20101	103128707
152576507	152576507
L09-12658	095267309
2009-00229	182204909
L08-22858	148229408
L08-16567	122792908
L08-06029	039042908
L09-01064	180522508
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189909504	189909504
L09-03060	012874909
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L09-17753	101416509
L07-10946	021368507
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L03-06025	058299103
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154816207	154816207
L08-16566	122029708
L08-14006	100339908
L08-14506	135982597
L08-14517	083018908
L08-11925	077569908
L08-12485	079222008
L08-13023	086065208
L08-13033	080658908
L08-14810	102227708
L08-13012	061084608
148381307	148381307
L07-23177	169983207
L08-16565	119944308
074597896	074597896
L08-18532	109668408
127188909	127188909
120068110	120068110
L07-10133	042564007
2014-03584	078497807
164753509	164753509
004632809	004632809
092172195	092172195
L01-16416	015800160
L09-06488	033298909
2011-08252	055140102
2011-04910	127781601

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2011-06475	013767102
2011-02638	036345101
2011-02633	022479901
2011-03517	101396701
2011-04902	115602201
2011-06358	000230602
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2011-06364	008030902
2011-03510	087839101
2011-20104	059847390
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2011-09339	049260511
2011-14558	082140711
2010-25064	170145010
2010-23153	123440006
2010-26313	173277410
2011-10679	105985402
2010-24053	164132710
2011-02634	023934901
2011-09529	088817302
093329303	093329303
2011-09531	093959902
133108409	133108409
2010-20656	142881410
2011-12605	033828103
2011-05397	152737301
2011-10867	159636502
2011-10695	131447102
2011-12969	128304903
2011-12625	061854403
2011-12612	053577503
2012-08784	043907012

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L09-12783	050385709
2012-16715	096088112
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2011-08259	064730802
2012-07578	037969612
2010-16168	117524210
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L08-22862	159291108
L09-04128	007766509
L08-4340	012930208
L09-2405	009759309
L09-07356	142911708
L09-06483	028801609
L09-04813	022539009
L09-05122	014265909
021396598	021396598
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2012-09945	045481911
2011-06492	038911602
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L07-13222	094554307
2011-14103	147864903
2011-12667	092730903
2011-14330	160715003
2011-12639	077417603
2011-12654	085468803
2011-12660	089170903
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2012-02963	011722812
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2012-20413	115103212
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2013-21482	072217197
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2013-12548	043087101
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2013-07034	021903113

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FCN	ACN
2012-25905	147785712
2012-22712	130776412
2012-27318	159223012
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L03-06311	105819802
2013-22548	065339600
2013-23986	119630900
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2013-27540	089434500
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List of Cases for Corrective Action Report 2018-IA-09

FCN	ACN
2012-15531	085938512
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2011-26354	153278111
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2013-21142	074981113
2013-12310	024578804
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2013-09577	071181809
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2013-09965	131150294
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2011-11667	064204111
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