Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

P.O. Box 650820
Sterling, VA 20165-0820
e-mail: forensics@cts-interlab.com
Telephone: +1-571-434-1925
Website: www.cts-forensics.com

DNA Interpretation Test No. 22-5882
Summary Report

Each participant received a sample pack consisting of a digital download packet through the CTS portal containing electropherograms and raw data files which they were requested to evaluate using their existing protocols. Data were returned from 35 participants and are compiled into the following tables:

This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each sample pack contained digital files consisting of electropherograms from DNA profiles of two known samples (Items 1 & 2) and two questioned samples (Items 3 & 4). Participants were requested to evaluate the electropherograms and interpret the data using their existing protocols.

SAMPLE PREPARATION: Item 1 was created using blood collected from a male donor. Item 2 was created using blood collected from another male donor. The Item 3 mixture was created by combining one part of blood from the Item 2 male donor, three parts of blood from a 3rd-party male donor, and one part of blood from a female donor. The Item 4 mixture was created by combining one part of blood from the Item 2 male donor and three parts of blood from the same 3rd-party male donor used in the Item 3 mixture.

SAMPLE SET ASSEMBLY: Once sample preparation and verification was completed, the digital upload was checked to ensure all items were accessible.

VERIFICATION: Laboratories that conducted predistribution testing of the electropherograms reported consistent results for all loci. All associations were consistent amongst the predistribution laboratories.

Consensus results on the following pages were determined by ensuring at least 10 participants returned results for the locus. Each allele listed was determined by ensuring that at least 75% of participants that returned data for that specific locus and item reported the same allele.

Amelogenin and STR Results

Results compiled by predistribution laboratories and a consensus of participants.

Item	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		
1	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
	14,14	29,29	15,15	X,Y	12,12	20,23
	13,14	12,12	17.3,24.2	8,9.3	8,11	18,18
	10	*	*	2		
2	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
	13,15.2	27,35	11,14	X,Y	8,10	25,25
	8,8	7,12	14,18	7,8	8,10	16,18
	11	*	*	2		
3	10,11,12,17.3	17,18,19	11,13,14	14,15,16,18	11,12	10,10
	12,13,14,16	12,13,14	15,18,22,25	12,12	10,11,12,13	13,15,16,17
	14,15	27,28,29	11,14,16	X,Y	11,12,13	21,23,24,25
	9,11,13	7,10,11,17	15,18,19	6,7,9.3	8,9	16,17
	10	*	*	2		
4	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10,10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	*	*	2		

YSTR Results

Results compiled from predistribution laboratories and a consensus of participants.

Item	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
1	36,39	17	14,14	12	28	22	10	11	13
	16	10	11	21	28	15	16	10	24
	36	9	13	18	19	21	21	11	13
2	37,41	15	17,17	13	30	21	11	11	13
	14	11	11	21	27	15	16	10	28
	38	11	11	19	15	19	21	13	12
3	37,38	17	17,20	13	30	21	10	11	14
	14	11	11,12	19	32	15	17	10	25
	40	11	11	16	15,17	20	22	13	12
4	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11	*	16,19	15,17	19,20	21,22	*	12

* Results were not received from a minimum of 10 participants for the loci indicated.

† Additional alleles may be present depending on laboratory thresholds and/or amplification kit used.

Summary Comments

This test was designed to allow participants to assess their proficiency in evaluating electropherograms (EPG) and interpreting data. Each participant received electropherograms (in HID and PDF formats, as available) of two reference items and two evidence items. The EPG data included were produced from the following amplification kits: GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler® Plus, YFiler™ Plus, PowerPlex® Y23.

Item 1 was the male victim's reference blood sample. Item 2 was the male suspect's reference blood sample. Item 3 was a mixture of blood samples from three individuals, including the male suspect, a third-party male donor, and a female donor (1:3:1 ratio, respectively). Item 4 was a mixture of blood samples from two individuals, including the male suspect and the same third-party male donor used in the Item 3 mixture (1:3 ratio, respectively).

Consensus results for each item were determined for each locus. Allele determinations were identified by ensuring that at least 10 participants reported results for the locus and that of those participants, 75% of them reported the same allele(s). Furthermore, results that differed from the consensus were also compared to the participant's reported interpretation guidelines.

STR Data

Thirty participants evaluated the provided STR data. The most frequently reported amplification kit utilized was GlobalFiler™.

For reference Item 1, all but one participant reported data that were concordant with the consensus.

For reference Item 2, all but one participant reported data that were concordant with the consensus.

For questioned Item 3, seventeen participants attempted the deconvolution of this 3-person mixture. A consensus was achieved for the entire major profile, and for three loci in the minor profile. A majority of participants with inconsistent results were missing alleles where the RFU value of the peak was above the participant's individual reported thresholds.

For questioned Item 4, seventeen participants attempted the deconvolution of this 2-person mixture. A consensus was achieved for the entire major profile, and for ten loci in the minor profile. A majority of participants with inconsistent results reported additional alleles.

YSTR Data

Twenty-four participants reported YSTR results.

For reference Item 1, all but one participant reported allelic responses that were concordant with the consensus.

For reference Item 2, all participants reported allelic responses that were concordant with the consensus.

For questioned Item 3, fifteen participants attempted the deconvolution of this mixture. A consensus was formed for the major profile, but not the minor profile. A majority of participants reported inconsistent results at loci DYS439 and DYS576.

For questioned Item 4, twelve participants attempted the deconvolution of this mixture. A consensus was formed for the entire major profile, and for ten loci in the minor profile. A majority of participants reported inconsistent results at loci DYS19 and DYS389-II.

Conclusions

For Item 3, twenty-nine participants reported that three (or at least three) individuals contributed to the mixture. Five participants reported two (or at least two) contributors and one participant reported four contributors. When comparing the Item 3 mixture profile with the Item 1 (victim) reference profile, thirty participants reported that the victim was excluded as a component of the mixture and five reported inconclusive/uninterpretable. A consensus was not achieved when comparing the Item 3 mixture profile with the Item 2 (suspect) reference profile. Eleven participants included the suspect, thirteen participants excluded the suspect, and eleven participants reported inconclusive/uninterpretable.

For Item 4, thirty-three participants reported that two (or at least two) individuals contributed to the mixture. Two participants reported three contributors. All participants excluded the victim (Item 1) and included the suspect (Item 2) as a component of the mixture.

Interpretation Guidelines

TABLE 1

WebCode	Analytical Threshold (rfu)	Peak Height Ratio (%)	Stochastic Threshold (rfu)
4BZH37	[Participant did not provide interpretation guidelines]		
4DQJ7A	50 RFU	60 % (heterozygotus treshold: 2000 RFU)	560 RFU in locus D22S1045 (29 cycles, full volume of PCR regents)
4LKNYB	120 rfu (STR); 75 rfu (YSTR)	60% (STR); 50% (YSTR)	360 rfu (STR); 75 rfu (YSTR)
4RABNN	[Participant did not provide interpretation guidelines]		
66QMEN	[Participant did not provide interpretation guidelines]		
6EEGQL	STR 185, Y-STR 90	60	STR 500, Y-STR 200
6RNWXQ	50 / 75	60	100
7DLT9P	150	60	400
7VFLTN	75	60	100
7XAACJ		60%	600rfu
8LAYM9	75 rfu	60%	100 rfu
9DEFL6	75	60	100
9J36YN	100 RFU	50%	100 RFU
AZGY3H	Fusion: 50, YSTR:50	Fusion: 70%, YSTR: 60%	Fusion: 150, YSTR: 150
BLHE2K	[Participant did not provide interpretation guidelines]		
BQFTU2	100 rfu	65%	600 rfu
DBAEM4	120 rfu (GF), 175 rfu (GFE)	60%	360 rfu (GF), 220 rfu (GFE)
EKWWF3	[Participant did not provide interpretation guidelines]		
EP8REK	75rfu	60%	100fru
ETP62T	75	60	230
FBLVU2	150	60	300
GQTFPB	50 RFU	NA for PG	NA for PG
H3F6XF	[Participant did not provide interpretation guidelines]		
HTEFNR	[Participant did not provide interpretation guidelines]		
HVLR7T	[Participant did not provide interpretation guidelines]		
JFPX9T	Dye channel specific, ranged from 125 rfu to 345 rfu	Locus specific, ranged from 61.1% to 81.3%	Dye channel specific, ranged from 430 rfu to 820 rfu
KT4P4C	75	60	100
PKXGQ8	STR: 75rfu, YSTR: 75rfu	STR: 60%, Y STR: 50%	STR: 100rfu, YSTR: 75rfu
PPUVJN	75 rfu	60%	100 rfu

TABLE 1

WebCode	Analytical Threshold (rfu)	Peak Height Ratio (%)	Stochastic Threshold (rfu)
RLKRLH	[Participant did not provide interpretation guidelines]		
VEQULK	120 rfu (GF) & 175 rfu (GFE)	60%	360 rfu (GF) & 220 rfu (GFE)
W2KX3H	100 rfu	60	300 rfu
X2DFBX	75 rfu, 75 rfu		
YB3JZC	[Participant did not provide interpretation guidelines]		
YCQWHU	[Participant did not provide interpretation guidelines]		

STR & Amelogenin Results

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

4DQJ7A GlobalFiler™ (HID Format) (LRmix Studio v. 2.1.5)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
			17.3,24.2	8,9.3	8,11	18,18
	10			2		

Analytical Threshold: 50 RFU

Peak Ht. Ratio: 60 % (heterozygotus treshold: 2000 RFU)

Stochastic Threshold: 560 RFU in locus D22S1045 (29 cycles, full volume of PCR regents)

4LKNYB GlobalFiler™ (HID Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
			17.3,24.2	8,9.3	8,11	18
	10			2		

Analytical Threshold: 120 rfu (STR); 75 rfu (YSTR)

Peak Ht. Ratio: 60% (STR); 50% (YSTR)

Stochastic Threshold: 360 rfu (STR); 75 rfu (YSTR)

4RABNN GlobalFiler™

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
			17.3,24.2	8,9.3	8,11	18,18
	10			2		

[No interpretation guidelines provided by this participant.]

66QMEN PowerPlex® Fusion 5C (PDF Format) (LR Mix 2.1.3)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12		8,9.3	8,11	18
	10					

[No interpretation guidelines provided by this participant.]

6EEGQL (HID Format) (GeneMapper ID-X 1.5)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
			17.3,24.2	8,9.3	8,11	18
	10			2		

Analytical Threshold: STR 185, Y-STR 90

Peak Ht. Ratio: 60

Stochastic Threshold: STR 500, Y-STR 200

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

6RNWXQ GlobalFiler™, PowerPlex® Fusion 6C (HID Format)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
	13,14	12,12	17.3,24.2	8,9.3	8,11	18,18
	10	18	19			

Analytical Threshold: 50 / 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

7DLT9P GlobalFiler™

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
			17.3,24.2	8,9.3	8,11	18
	10			2		

Analytical Threshold: 150 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 400

7VFLTN PowerPlex® Fusion 6C

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12	17.3,24.2	8,9.3	8,11	18
	10	18	19			

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

7XAACJ GlobalFiler™ (PDF Format)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
			R,24.2	8,9.3	8,11	18,18
	10			2		

Analytical Threshold: **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 600rfu

8LAYM9 GlobalFiler™, PowerPlex® Fusion 6C (PDF Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12	17.3,24.2	8,9.3	8,11	18
	10	18	19	2		

Analytical Threshold: 75 rfu **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 100 rfu

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

9DEFL6 GlobalFiler™ (PDF Format)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
			17.3,24.2	8,9.3	8,11	18,18
	10			2		

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

9J36YN GlobalFiler™ (HID Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
			17.3,24.2	8,9.3	8,11	18
	10			2		

Analytical Threshold: 100 RFU **Peak Ht. Ratio:** 50% **Stochastic Threshold:** 100 RFU

AZGY3H PowerPlex® Fusion 5C (PDF Format), (HID Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12		8,9.3	8,11	18
	10					

Analytical Threshold: Fusion: 50, YSTR:50 **Peak Ht. Ratio:** Fusion: 70%, YSTR: 60% **Stochastic Threshold:** Fusion: 150, YSTR: 150

BLHE2K GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format) (LabRetriever v2.2.1)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12	17.3,24.2	8,9.3	8,11	18
	10	18	19	2		

[No interpretation guidelines provided by this participant.]

BQFTU2 Investigator® 24plex (PDF Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
			17.3,24.2	8,9.3	8,11	18
	10					

Analytical Threshold: 100 rfu **Peak Ht. Ratio:** 65% **Stochastic Threshold:** 600 rfu

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

DBAEM4 GlobalFiler™ (PDF Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
			17.3,24.2	8,9.3	8,11	18
	10			2		

Analytical Threshold: 120 rfu (GF), 175 rfu (GFE) **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 360 rfu (GF), 220 rfu (GFE)

EKWWF3 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12	17.3,24.2	8,9.3	8,11	18
	10	18	19	2		

[No interpretation guidelines provided by this participant.]

EP8REK GlobalFiler™ (PDF Format)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
	-	-	17.3,24.2	8,9.3	8,11	18,18
	10	-	-	2		

Analytical Threshold: 75rfu **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 100fru

ETP62T PowerPlex® Fusion 6C (PDF Format) (STRmix)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12	17.3,24.2	8,9.3	8,11	18
	10	18	19			

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 230

FBLVU2 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (HID Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12	17.3,24.2	8,9.3	8,11	18
	10	18	19	2		

Analytical Threshold: 150 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 300

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

GQTFPB GlobalFiler™ (HID Format) (BP Sentry formerly BulletProof)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
			17.3,24.2	8,9.3	8,11	18,18
	10			2		

Analytical Threshold: 50 RFU
Peak Ht. Ratio: NA for PG
Stochastic Threshold: NA for PG

H3F6XF GlobalFiler™, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
			17.3,24.2	8,9.3	8,11	18,18
	10			2		

[No interpretation guidelines provided by this participant.]

JFPX9T PowerPlex® Fusion 6C (HID Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12	17.3,24.2	8,9.3	8,11	18
	10	18	19			

Analytical Threshold: Dye channel specific, ranged from 125 rfu to 345 rfu
Peak Ht. Ratio: Locus specific, ranged from 61.1% to 81.3%
Stochastic Threshold: Dye channel specific, ranged from 430 rfu to 820 rfu

KT4P4C GlobalFiler™ (PDF Format), (HID Format) (STRmix)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
			17.3,24.2	8,9.3	8,11	18,18
	10			2		

Analytical Threshold: 75
Peak Ht. Ratio: 60
Stochastic Threshold: 100

PKXGQ8 GlobalFiler™ (PDF Format)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
	N/A	N/A	17.3,24.2	8,9.3	8,11	18,18
	10	N/A	N/A	2		

Analytical Threshold: STR: 75rfu, YSTR: 75rfu
Peak Ht. Ratio: STR: 60%, Y STR: 50%
Stochastic Threshold: STR: 100rfu, YSTR: 75rfu

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 1 - STR Results

PPUVJN (HID Format)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
			17.3,24.2	8,9.3	8,11	18,18
	10			2		

Analytical Threshold: 75 rfu **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 100 rfu

VEQULK GlobalFiler™ (PDF Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
			17.3,24.2	8,9.3	8,11	18
	10			2		

Analytical Threshold: 120 rfu (GF) & 175 rfu (GFE) **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 360 rfu (GF) & 220 rfu (GFE)

W2KX3H GlobalFiler™ (HID Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
			17.3,24.2	8,9.3	8,11	18
	10			2		

Analytical Threshold: 100 rfu **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 300 rfu

X2DFBX PowerPlex® Fusion 5C (HID Format)

	12,16	17	11	17,18	11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14	29	15	X,Y	12	20,23
	13,14	12		8,9.3	8,11	18
	10					

Analytical Threshold: 75 rfu, 75 rfu **Peak Ht. Ratio:** **Stochastic Threshold:**

YCQWHU GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format) (STRmix)

	12,16	17,17	11,11	17,18	11,11	9,11
	12,14	14,16	18,20	8,12	12,13	12,16
1	14,14	29,29	15,15	X,Y	12,12	20,23
	13,14	12,12	17.3,24.2	8,9.3	8,11	18,18
	10	18	19	2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

4DQJ7A GlobalFiler™ (HID Format) (LRmix Studio v. 2.1.5)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 50 RFU

Peak Ht. Ratio: 60 % (heterozygotus treshold: 2000 RFU)

Stochastic Threshold: 560 RFU in locus D22S1045 (29 cycles, full volume of PCR regents)

4LKNYB GlobalFiler™ (HID Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 120 rfu (STR); 75 rfu (YSTR)

Peak Ht. Ratio: 60% (STR); 50% (YSTR)

Stochastic Threshold: 360 rfu (STR); 75 rfu (YSTR)

4RABNN GlobalFiler™

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
			14,18	7,8	8,10	16,18
	11			2		

[No interpretation guidelines provided by this participant.]

66QMEN PowerPlex® Fusion 5C (PDF Format) (LR Mix 2.1.3)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12		7,8	8,10	16,18
	11					

[No interpretation guidelines provided by this participant.]

6EEGQL (HID Format) (GeneMapper ID-X 1.5)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: STR 185, Y-STR 90

Peak Ht. Ratio: 60

Stochastic Threshold: STR 500, Y-STR 200

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

6RNWXQ GlobalFiler™, PowerPlex® Fusion 6C (HID Format)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
	8,8	7,12	14,18	7,8	8,10	16,18
	11,11	19	15			

Analytical Threshold: 50 / 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

7DLT9P GlobalFiler™

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 150 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 400

7VFLTN PowerPlex® Fusion 6C

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12	14,18	7,8	8,10	16,18
	11	19	15			

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

7XAACJ GlobalFiler™ (PDF Format)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 600rfu

8LAYM9 GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C (PDF Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12	14,18	7,8	8,10	16,18
	11	19	15	2		

Analytical Threshold: 75 rfu **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 100 rfu

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

9DEFL6 GlobalFiler™ (PDF Format)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

9J36YN GlobalFiler™ (HID Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 100 RFU **Peak Ht. Ratio:** 50% **Stochastic Threshold:** 100 RFU

AZGY3H PowerPlex® Fusion 5C (PDF Format), (HID Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12		7,8	8,10	16,18
	11					

Analytical Threshold: Fusion: 50, YSTR:50 **Peak Ht. Ratio:** Fusion: 70%, YSTR: 60% **Stochastic Threshold:** Fusion: 150, YSTR: 150

BLHE2K GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format) (LabRetriever v2.2.1)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12	14,18	7,8	8,10	16,18
	11	19	15	2		

[No interpretation guidelines provided by this participant.]

BQFTU2 Investigator® 24plex (PDF Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11					

Analytical Threshold: 100 rfu **Peak Ht. Ratio:** 65% **Stochastic Threshold:** 600 rfu

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

DBAEM4 GlobalFiler™ (PDF Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 120 rfu (GF), 175 rfu (GFE) **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 360 rfu (GF), 220 rfu (GFE)

EKWWF3 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12	14,18	7,8	8,10	16,18
	11	19	15	2		

[No interpretation guidelines provided by this participant.]

EP8REK GlobalFiler™ (PDF Format)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
	-	-	14,18	7,8	8,10	16,18
	11	-	-	2		

Analytical Threshold: 75rfu **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 100fru

ETP62T PowerPlex® Fusion 6C (PDF Format) (STRmix)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12	14,18	7,8	8,10	16,18
	11	19	15			

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 230

FBLVU2 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (HID Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12	14,18	7,8	8,10	16,18
	11	19	15	2		

Analytical Threshold: 150 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 300

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

GQTFPB GlobalFiler™ (HID Format) (BP Sentry formerly BulletProof)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 50 RFU
Peak Ht. Ratio: NA for PG
Stochastic Threshold: NA for PG

H3F6XF GlobalFiler™, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
			14,18	7,8	8,10	16,18
	11			2		

[No interpretation guidelines provided by this participant.]

JFPX9T PowerPlex® Fusion 6C (HID Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12	14,18	7,8	8,10	16,18
	11	19	15			

Analytical Threshold: Dye channel specific, ranged from 125 rfu to 345 rfu
Peak Ht. Ratio: Locus specific, ranged from 61.1% to 81.3%
Stochastic Threshold: Dye channel specific, ranged from 430 rfu to 820 rfu

KT4P4C GlobalFiler™ (PDF Format), (HID Format) (STRmix)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 75
Peak Ht. Ratio: 60
Stochastic Threshold: 100

PKXGQ8 GlobalFiler™ (PDF Format)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
	N/A	N/A	14,18	7,8	8,10	16,18
	11	N/A	N/A	2		

Analytical Threshold: STR: 75rfu, YSTR: 75rfu
Peak Ht. Ratio: STR: 60%, Y STR: 50%
Stochastic Threshold: STR: 100rfu, YSTR: 75rfu

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 2 - STR Results

PPUVJN (HID Format)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 75 rfu | **Peak Ht. Ratio:** 60% | **Stochastic Threshold:** 100 rfu

VEQULK GlobalFiler™ (PDF Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 120 rfu (GF) & 175 rfu (GFE) | **Peak Ht. Ratio:** 60% | **Stochastic Threshold:** 360 rfu (GF) & 220 rfu (GFE)

W2KX3H GlobalFiler™ (HID Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 100 rfu | **Peak Ht. Ratio:** 60 | **Stochastic Threshold:** 300 rfu

X2DFBX PowerPlex® Fusion 5C (HID Format)

	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12		7,8	8,10	16,18
	11					

Analytical Threshold: 75 rfu, 75 rfu | **Peak Ht. Ratio:** | **Stochastic Threshold:**

YCQWHU GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format) (STRmix)

	11,14	20,21	13,13	15,16	12,13	10,10
	13,14	13,14	15,16	11,12	11,12	13,18
2	13,15.2	27,35	11,14	X,Y	8,10	25,25
	8,8	7,12	14,18	7,8	8,10	16,18
	11	19	15	2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

4DQJ7A GlobalFiler™ (HID Format) (LRmix Studio v. 2.1.5)

	10,11,12,14,17.3	17,18,19,20,21	11,12,13,14,15	14,15,16,18	11,12,13	10
	12,13,14,16,17	12,13,14	15,16,18,22,24,25	12,13	10,11,12,13	13,15,16,17,18
3	12.2,14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,16,18,19	6,7,8,9.3	8,9,10	16,17,18
	10,11			2		
	10,17.3	18,19	11,14	15,18	11,12	10,10
	16,16	12,13	15,22	12,12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15,15	6,7	8,9	16,17
	10					
	12,17.3	17,_	11,_	14,16	_,12	10,10
	12,_	14,14	18,25	12,12	10,11	13,17
3minor	14,_	27,_	11,11	X,X	11,12	21,24
			18,19	6,9.3	8,_	_,17

Analytical Threshold: 50 RFU

Peak Ht. Ratio: 60 % (heterozygotus treshold: 2000 RFU)

Stochastic Threshold: 560 RFU in locus D22S1045 (29 cycles, full volume of PCR regents)

4LKNYB GlobalFiler™ (HID Format)

	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10			2		

Analytical Threshold: 120 rfu (STR); 75 rfu (YSTR)

Peak Ht. Ratio: 60% (STR); 50% (YSTR)

Stochastic Threshold: 360 rfu (STR); 75 rfu (YSTR)

4RABNN GlobalFiler™ (HID Format) (BP Sentry (formerly Bullet Proof))

	10,11,12,14,17.3	17,18,19,21	11,13,14	14,15,16,18	11,12	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

66QMEN PowerPlex® Fusion 5C (PDF Format) (LR Mix 2.1.3)

	10,[12],[14],17.3	[17],18,19,[21]	11,14	15,[16],18	11,12	10
	[12],[14],16	12,13,[14]	15,[18],22,[25]	12	[10],[11],12,13	[13],15,16,[17]
3	14,15,[15.2]	[27],28,29	[11],14,16	X,Y	[10],[11],12,13	[21],23,[24],25
	9,[11],13	7,[10],11,[17]		6,7,[9.3]	8,9	16,17
	10					
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
	9,13	7,11		6,7	8,9	16,17
	10					
	12,14	17,21		16		
	12,14	14	18,25		10,11	13,17
3minor	15.2	27	11		10,11	21,24
	11	10,17		9.3		

[No interpretation guidelines provided by this participant.]

6EEGQL (HID Format) (GeneMapper ID-X 1.5, LRmix Studio 2.1.3)

	10,11,12,17.3	17,18,19,20	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17
3	14,15	27,28,29,35	11,14,16	X,Y	8,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		

Analytical Threshold: STR 185, Y-STR 90 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** STR 500, Y-STR 200

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

6RNWXQ GlobalFiler™, PowerPlex® Fusion 6C (HID Format)

	10,12,17.3	17,18,19	11,13,14	14,15,16,18	11,12,13	10,10
	12,13,14,16	12,13,14	15,18,22,25	12,12	10,11,12,13	13,15,16,17
3	14,15	27,28,29,35	11,14,16	X,Y	8,11,12,13	21,23,24,25
	9,11,13	7,10,11,17	15,18,19	6,7,8,9.3	8,9,10	16,17
	10	16	17			
	10,17.3	18,19	11,11	15,18	12,12	10,10
	16,16	12,13	15,22	12,12	12,13	15,16
3major	14,14	28,29	14,16	X,Y	12,13	23,25
	9,13	7,11	15,15	6,7	8,9	
	10	16	17			
	12,12	17,18	14,14	14,16	11,11	
		13,14	18,25		10,11	13,17
3minor	15,15		11,11		8,11	21,24
		10,17	18,19	6,9.3	8,10	

Analytical Threshold: 50 / 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

7DLT9P GlobalFiler™

	10,11,12,17.3	17,18,19,20	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17
3	14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10			2		
	11,12	17,20	13	14,16	13	
	12,13,14	14	18,25		10,11	13,17
3minor		27,35	11	X	8,10,11	21,24
			18,19	8,9.3	10	

Analytical Threshold: 150 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 400

TABLE 2

Item 3 - STR Results

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	**D2S1338**	**D2S441**	**D3S1358**	**D5S818**	**D7S820**
	D8S1179	**D10S1248**	**D12S391**	**D13S317**	**D16S539**	**D18S51**
Item	**D19S433**	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**
	Penta D	**Penta E**	**SE33**	**TH01**	**TPOX**	**vWA**
	DYS391	**DYS570**	**DYS576**	**Y Indel**		
7VFLTN	PowerPlex® Fusion 6C					
	10,11,12,17.3	17,18,19	11,13,14	14,15,16,18	11,12	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17
3	13,14,15	27,28,29	11,14,16	X,Y	11,12,13	21,23,24,25
	8,9,11,13	7,10,11,17	15,18,19	6,7,9.3	8,9	16,17,18
	10,11	16	17			
	10,17.3	18,19	11,14	15,16	11,12	10
	16		15,22	12	12,13	15,16
3major	14,15					
	9,13	7,11	15	6,7		16,17
Analytical Threshold: 75			**Peak Ht. Ratio:** 60		**Stochastic Threshold:** 100	
7XAACJ	GlobalFiler™ (PDF Format)					
	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		
Analytical Threshold:			**Peak Ht. Ratio:** 60%		**Stochastic Threshold:** 600rfu	
8LAYM9	PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format)					
	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17,18
3	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
	9,11,13	7,10,11,17	15,18,19	6,7,8,9.3	8,9,10	16,17,18
	10,11	16	15,17	2		
Analytical Threshold: 75 rfu			**Peak Ht. Ratio:** 60%		**Stochastic Threshold:** 100 rfu	

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

9DEFL6 GlobalFiler™ (PDF Format)

	10,(11,12),17.3	(17),18,19,(20,21)	11,14	(14),15,(16),18	11,12,(13)	10,10
	(12,13,14),16	12,13,(14)	15,(18),22,(24,25)	12,12	(10,11),12,13	(13),15,16,(17,18)
3	14,15	(27),28,29,(35)	(11),14,16	X,Y	(8,10,11),12,13	(21),23,(24),25
			15,(18,19)	6,7,(8,9.3)	8,9,(10)	16,17
	10			2		
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	11,12	17,20,21		14,16	13	
	12,13,14	14	18,24,25		10,11	13,17,18
3minor		27,25	11		8,10,11	21,24
			18,19	8,9.3	10	

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

9J36YN GlobalFiler™ (HID Format)

	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	14,15,16.2	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10					
	11,12	17,20,21	13	14,16	13	
	12,13,14	14	18,24,25		10,11	13,17,18
3minor	16.2	27,35	11		8,10,11	21,24
			18,19	8,9.3	10	

Analytical Threshold: 100 RFU **Peak Ht. Ratio:** 50% **Stochastic Threshold:** 100 RFU

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

AZGY3H PowerPlex® Fusion 5C (PDF Format), (HID Format)

	10,11,12,14,17.3	17,18,19,21	11,13,14	14,15,16,17,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17,18
3	14,15,15.2	27,28,29	11,14,15,16	X,Y	8,10,11,12,13	21,23,24,25
	9,11,13	7,10,11,17		6,7,9.3	8,9	16,17
	10					
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14	28,29	14,16	X,Y	12	23,25
	9,13	7,11		6,7	8,9	16,17
	10					
	12,14	17,21	13	14,16,17	13	10
	12,13,14	14	18,25	12	10,11	13,17,18
3minor	15,15.2	27	11,15	X,Y	8,10,11,13	21,24
	11	10,17		9.3	8,9	16,17
	10					

Analytical Threshold: Fusion: 50, YSTR:50 **Peak Ht. Ratio:** Fusion: 70%, YSTR: 60% **Stochastic Threshold:** Fusion: 150, YSTR: 150

BLHE2K GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format) (LabRetriever v2.2.1)

	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
	8,9,11,13	7,10,11,17	15,18,19	6,7,8,9.3	8,9,10	16,17,18
	10	16	17	2		
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
	9,13	7,11	15	6,7	8,9	16,17
	10	16	17	2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

BQFTU2 Investigator® 24plex (PDF Format)

	10,12,17.3	17,18,19	11,14	14,15,18	11,12	10
	12,16	12,13,14	15,18,22**	12	10,11,12,13	13,15,16,17
3	14,15	27,28,29	11,14,16	X,Y	11,12,13	23,24,25**
			15,18,19	6,7,9.3	8,9**	16,17
	10					
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10					
	10,12	17,18	11+	14+	12+	10
	12+	14	_	12	10,11	13,17
3minor	14	27,29	11+	_	11+	_
			18,19	9.3+	_	16,17
	_					

Analytical Threshold: 100 rfu **Peak Ht. Ratio:** 65% **Stochastic Threshold:** 600 rfu

DBAEM4 GlobalFiler™ (PDF Format)

	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10			2		

Analytical Threshold: 120 rfu (GF), 175 rfu (GFE) **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 360 rfu (GF), 220 rfu (GFE)

EKWWF3 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format)

	10,12,17.3	17,18,19	11,14	14,15,16,18	11,12	10
	12,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17
3	14,15	27,28,29	11,14,16	X,Y	11,12,13	21,23,24,25
	9,11,13	7,10,11,17	15,18,19	6,7,9.3	8,9	16,17
	10	16	17	2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

EP8REK GlobalFiler™ (PDF Format)

	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
	-	-	15,18,19	6,7,8,9.3	8,9,10	16,17
	10	-	-	2		

Analytical Threshold: 75rfu **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 100fru

ETP62T PowerPlex® Fusion 6C (PDF Format) (STRmix)

	10,11,12,17.3	17,18,19	11,13,14	14,15,16,18	11,12	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17
3	13,14,15	27,28,29	11,14,16	X,Y	11,12,13	21,23,24,25
	8,9,11,13	7,10,11,17	15,18,19	6,7,9.3	8,9	16,17,18
	10,11	16	17			

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 230

FBLVU2 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (HID Format)

	10,12,17.3			14,15,16,18	11,12	10
		12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17
3	14,15	27,28,29	11,14,16	X,Y		21,23,24,25
	9,11,13	7,10,11,17	15,18,19	6,7,9.3	8,9	16,17
	10	16	17	2		

Analytical Threshold: 150 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 300

GQTFPB GlobalFiler™ (HID Format) (BP Sentry formerly BulletProof)

	10,11,12,14,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		

Analytical Threshold: 50 RFU **Peak Ht. Ratio:** NA for PG **Stochastic Threshold:** NA for PG

H3F6XF GlobalFiler™, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format)

	10,11,12,14,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10,11			2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

JFPX9T PowerPlex® Fusion 6C (HID Format) (STRmix)

	10,12,17.3	17,18,19	11,13,14	14,15,16,18	11,12	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17
3	13,14,15	27,28,29	11,14,16	X,Y	11,12,13	21,23,24,25
	8,9,11,13	7,10,11,17	15,18,19	6,7,9.3	8,9	16,17,18
	10,11	16	17			
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
	9,13	7,11	15	6,7	8,9	16,17
	10	16	17			

Analytical Threshold: Dye channel specific, ranged from 125 rfu to 345 rfu

Peak Ht. Ratio: Locus specific, ranged from 61.1% to 81.3%

Stochastic Threshold: Dye channel specific, ranged from 430 rfu to 820 rfu

KT4P4C GlobalFiler™ (PDF Format), (HID Format) (STRmix)

	10,17.3	18,19	11,14	15,18	11,12	10,10
	16,16	12,13,14	15,22	12,12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15,15	6,7	8,9	16,17
	10			2		
	11,12	17,20,21	13	14,16	13	
	12,13,14		18,22,25		10,11	13,17,18
3minor		27,35	11		8,10,11	21,24
			18,19	8,9.3	10	

Analytical Threshold: 75

Peak Ht. Ratio: 60

Stochastic Threshold: 100

PKXGQ8 GlobalFiler™ (PDF Format)

	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17,18
3	14,15	27,28,29	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
	N/A	N/A	15,18,19	6,7,8,9.3	8,9,10	16,17
	10	N/A	N/A	2		

Analytical Threshold: STR: 75rfu, YSTR: 75rfu

Peak Ht. Ratio: STR: 60%, Y STR: 50%

Stochastic Threshold: STR: 100rfu, YSTR: 75rfu

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

PPUVJN (HID Format) (STRMIX)

	9,10,11,12,14,16.3,17.1,17.3	16,17,18,19,20,21	10,11,12,13,14,15	13,14,15,16,17,18	10,11,12,13	9,10
	12,13,14,15,16,17	11,12,13,14	14,15,16,OL,17,18,21,22,24,25	11,12	10,11,12,13	13,14,15,16,17,18
3	13,14,15,16.2	27,28,29,35	11,13,14,15,16,17	X,Y	8,10,11,12,13	20,21,22,23,24,25
			14,14.2,15,16,17,18,19	5,6,7,8,9.3	7,8,9,10	15,16,17
	9,10,11			2		
	10,17.3	18,19	11,14	15,18	11,12	10,10
	16,16	12,13	15,22	12,12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15,15	6,7	8,9	16,17
	10			2		
	11,12	17,20,21	13	14,16	13	
	12,13,14	14	18,24,25		10,11	13,17,18
3minor		27,35	11	X,Y	8,10,11	21,24
			18,19	8,9.3	10	
				2		

Analytical Threshold: 75 rfu **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 100 rfu

VEQULK GlobalFiler™ (PDF Format)

	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,24,25	12	10,11,12,13	13,15,16,17,18
3	14,15	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10			2		

Analytical Threshold: 120 rfu (GF) & 175 rfu (GFE) **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 360 rfu (GF) & 220 rfu (GFE)

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 3 - STR Results

W2KX3H GlobalFiler™ (HID Format)

	8,10,11,12,17.3	17,18,19,20,21	11,14	14,15,16,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17,18
3	14,15,16.2	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
			15,18,19	6,7,8,9.3	8,9,10	16,17
	10			2		
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
3major	14,15	28,29	14,16		12,13	23,25
			15	6,7	8,9	16,17
	10					

Analytical Threshold: 100 rfu **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 300 rfu

X2DFBX PowerPlex® Fusion 5C (HID Format)

	10,12,14,17.3	17,18,19,21	11,13,14	14,15,16,17,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17,18
3	14,15,15.2	27,28,29	11,14,15,16	X,Y	8,10,11,12,13	21,23,24,25
	9,11,13	7,10,11,17		6,7,9.3	8,9	16,17
	10					

Analytical Threshold: 75 rfu, 75 rfu **Peak Ht. Ratio:** **Stochastic Threshold:**

YCQWHU GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format) (STRmix)

	10,11,12,17.3	17,18,19,20,21	11,13,14	14,15,16,17,18	11,12,13	10
	12,13,14,16	12,13,14	15,18,22,25	12	10,11,12,13	13,15,16,17,18
3	14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,11,12,13	21,23,24,25
	8,9,11,13	7,10,11,17	15,18,19	6,7,8,9.3	8,9,10	16,17,18
	10	16	17	2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

4DQJ7A GlobalFiler™ (HID Format) (LRmix Studio v. 2.1.5)

	10,11,14,17.3,18.3	18,19,20,21	11,13,14,15	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
			14,15,18	6,7,8	8,9,10	16,17,18
	10,11			2		
	10,17.3	18,19	11,14	15,18	11,12	10,10
	16,16	12,13	15,22	12,12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
			15,15	6,7	8,_	16,17
	10					
	11,14	20,21	13,13	16	12,13	10,10
	13,14	_,14	15,16	11,_	11,12	13,18
4minor	13,15.2	27,35	11,14	X,Y	8,10	_,25
			14,18	_,8	_,10	_,18
	11					

Analytical Threshold: 50 RFU

Peak Ht. Ratio: 60 % (heterozygotus treshold: 2000 RFU)

Stochastic Threshold: 560 RFU in locus D22S1045 (29 cycles, full volume of PCR regents)

4LKNYB GlobalFiler™ (HID Format)

	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10			2		
	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
4minor	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 120 rfu (STR); 75 rfu (YSTR)

Peak Ht. Ratio: 60% (STR); 50% (YSTR)

Stochastic Threshold: 360 rfu (STR); 75 rfu (YSTR)

4RABNN GlobalFiler™ (HID Format) (BP Sentry formerly Bullet Proof)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
			14,15,18	6,7,8	8,9,10	16,17,18
	10,11			2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

66QMEN PowerPlex® Fusion 5C (PDF Format) (LR Mix 2.1.3)

	10,[11],[14],17.3	18,19,[20],[21]	11,[13],14	15,[16],18	11,12,[13]	10
	[13],[14],16	12,13,[14]	15,[16],22	[11],12	[11],12,13	[13],15,16,[18]
4	[13],14,15,[15.2]	[27],28,29,[35]	[11],14,16	X,Y	[8],[10],12,13	23,25
	[8],9,13	7,11,[12]		6,7,[8]	8,9,[10]	16,17,[18]
	10,[11]					
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
	9,13	7,11		6,7	8,9	16,17
	10					
	11,14	20,21	13	16	13	
	13,14	14	16	11	11	13,18
4minor	13,15.2	27,35	11		8,10	
	8	12		8	10	18
	11					

[No interpretation guidelines provided by this participant.]

6EEGQL (HID Format) (GeneMapper ID-X 1.5, LRmix Studio 2.1.3)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
			14,15,18	6,7,8	8,9,10	16,17,18
	10,11			2		

Analytical Threshold: STR 185, Y-STR 90 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** STR 500, Y-STR 200

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

6RNWXQ GlobalFiler™, PowerPlex® Fusion 6C (HID Format)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10,10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	16,19	15,17			
	10,17.3	18,19	11,14	15,18	11,12	10,10
	16,16	12,13	15,22	12,12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	25,25
	9,13	7,11	15,15	6,7	8,8	16,17
	10	16	17			
	11,14	20,21	13,13	15,16	12,13	
	13,14	13,14	15,16	11,12	11,12	13,18
4minor	13,15.2	27,35	11,16		8,10	23,23
	8	7,12	14,18	7,8		16,18
	11	19	15			

Analytical Threshold: 50 / 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

7DLT9P GlobalFiler™

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
			14,15,18	6,7,8	8,9,10	16,17,18
	10,11			2		
		18,19		15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8	16,17
	10			2		
		20,21		16	13	
	13,14	14	16	11	11	13,18
4minor	13,15.2	27,35	11		8,10	
			14,18	8	9,10	18
	11					

Analytical Threshold: 150 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 400

TABLE 2

Item 4 - STR Results

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		
7VFLTN	PowerPlex® Fusion 6C					
	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	16,19	15,17			
	10,17.3	18,19		15,18	11,12	10
	16	12,13	15,22	12	12,13	
4major	14,15	28,29	14,16		12,13	23,25
		7,11	15	6,7		16,17
	11,14					
	13,14					
4minor	13,15.2	27,35				
			14,18			
Analytical Threshold: 75			Peak Ht. Ratio: 60		Stochastic Threshold: 100	
7XAACJ	GlobalFiler™ (PDF Format)					
	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
			14,15,18	6,7,8	8,9,10	16,17,18
	10,11			2		
Analytical Threshold:			Peak Ht. Ratio: 60%		Stochastic Threshold: 600rfu	
8LAYM9						
	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	16,19	15,17	2		
Analytical Threshold: 75 rfu			Peak Ht. Ratio: 60%		Stochastic Threshold: 100 rfu	

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

9DEFL6 GlobalFiler™ (PDF Format)

	10,(11,14),17.3	18,19,(20,21)	11,13,14	15,(16),18	11,12,(13)	10,10
	(13,14),16	12,13,(14)	15,(16),22	(11),12	(11),12,13	(13),15,16,(18)
4	(13),14,15,(15.2)	(27),28,29,(35)	(11),14,16	X,Y	(8,10),12,13	23,25
			(14),15,(18)	6,7,(8)	8,(9,10)	16,17,(18)
	10,(11)			2		
	10,17.3	18,19	11,13,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16		12,13	23,25
			15	6,7	8	16,17
	10					
	11,14	20,21		16	13	
	13,14	14	16	11	11	13,18
4minor	13,15.2	27,35	11		8,10	
			14,18	8	9,10	18
	11					

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 100

9J36YN GlobalFiler™ (HID Format) (LRmix Studio 2.1.3 Community Edition)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
			14,15,18	6,7,8	8,9,10	16,17,18
	10,11			2		
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10			2		
	11,14	20,21	13	16	13	
	13,14	14	16	11	11	13,18
4minor	13,15.2	27,35	11		8,10	
			14,18	8	10	18
	11					

Analytical Threshold: 100 RFU **Peak Ht. Ratio:** 50% **Stochastic Threshold:** 100 RFU

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

AZGY3H PowerPlex® Fusion 5C (PDF Format), (HID Format)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12		6,7,8	8,9,10	16,17,18
	10,11					
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
	9,13	7,11		6,7	8,9	16,17
	10					
	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
4minor	13,15.2	27,35	11,14	X,Y	8,10	25
	8	7,12		7,8	8,10	16,18
	11					

Analytical Threshold: Fusion: 50, YSTR:50 **Peak Ht. Ratio:** Fusion: 70%, YSTR: 60% **Stochastic Threshold:** Fusion: 150, YSTR: 150

BLHE2K GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format) (LabRetriever v2.2.1)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	16,19	15,17	2		
	10,17.3	18,19	INC	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
	9,13	7,11	15	6,7	INC	16,17
	10	16	17	2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

BQFTU2 Investigator® 24plex (PDF Format)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,16**	12,13,14	_	11,12	11,12,13	13,15,16,18
4	13,14,15,15.3	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
			14,15,18	6,7,8	8,9,10	16,17,18
	10,11					
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	_	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	25+
			15	6,7	8,9	16,17
	10					
	11,14	20,21	13	16+	13+	10
	_	14+	_	11+	11,12	13,18
4minor	13,15.2	27,35	11+	X,Y	8,10	_
			14,18	8+	8,10	16,18
	11					

Analytical Threshold: 100 rfu **Peak Ht. Ratio:** 65% **Stochastic Threshold:** 600 rfu

DBAEM4 GlobalFiler™ (PDF Format)

	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10			2		
	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
4minor	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 120 rfu (GF), 175 rfu (GFE) **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 360 rfu (GF), 220 rfu (GFE)

EKWWF3 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	16,19	15,17	2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

EP8REK GlobalFiler™ (PDF Format) (LRmix Studio 2.1.3)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	-	-	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	-	-	2		

Analytical Threshold: 75rfu **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 100fru

ETP62T PowerPlex® Fusion 6C (PDF Format) (STRmix)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	16,19	15,17			

Analytical Threshold: 75 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 230

FBLVU2 GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (HID Format)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	16,19	15,17	2		

Analytical Threshold: 150 **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 300

GQTFPB GlobalFiler™ (HID Format) (BP Sentry formerly BulletProof)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
			14,15,18	6,7,8	8,9,10	16,17,18
	10,11			2		

Analytical Threshold: 50 RFU **Peak Ht. Ratio:** NA for PG **Stochastic Threshold:** NA for PG

H3F6XF GlobalFiler™, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
			14,15,18	6,7,8	8,9,10	16,17,18
	10,11			2		

[No interpretation guidelines provided by this participant.]

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

JFPX9T PowerPlex® Fusion 6C (HID Format) (STRmix)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	16,19	15,17			
	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
	9,13	7,11	15	6,7	8,9	16,17
	10	16	17			

Analytical Threshold: Dye channel specific, ranged from 125 rfu to 345 rfu

Peak Ht. Ratio: Locus specific, ranged from 61.1% to 81.3%

Stochastic Threshold: Dye channel specific, ranged from 430 rfu to 820 rfu

KT4P4C GlobalFiler™ (PDF Format), (HID Format) (STRmix)

	10,17.3	18,19	11,13,14	15,18	11,12	10,10
	16,16	12,13	15,22	12,12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
			15,15	6,7	8,8	16,17
	10			2		
	11,14	20,21		16	13	
	13,14	14	16	11	11	13,18
4minor	13,15.2	27,35	11		8,10	
			14,18	8	9,10	18
	11					

Analytical Threshold: 75

Peak Ht. Ratio: 60

Stochastic Threshold: 100

PKXGQ8 GlobalFiler™ (PDF Format)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	N/A	N/A	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	N/A	N/A	2		

Analytical Threshold: STR: 75rfu, YSTR: 75rfu

Peak Ht. Ratio: STR: 60%, Y STR: 50%

Stochastic Threshold: STR: 100rfu, YSTR: 75rfu

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

PPUVJN (HID Format) (STRMIX)

	9,10,11,14,16.3,17.3	17,18,19,20,21	10,11,12,13,14	14,15,16,17,18	10,11,12,13	9,10
	13,14,15,16	11,12,13,14	14,15,16,21,22	11,12	11,12,13	13,14,15,16,17,18
4	13,14,15,15.2	27,28,29,35	11,13,14,15,16,17	X,Y	8,10,11,12,13	22,23,24,25
			14,14.2,15,18	6,7,8	8,9,10	15,16,17,18
	9,10,11			2		
	10,17.3	18,19	11,14	15,18	11,12	10,10
	16,16	12,13	15,22	12,12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
			15,15	6,7	8	16,17
	10			2		
	11,14	20,21	13	16	13	
	13,14	14	16	11	11	13,18
4minor	13,15.2	27,35	11	X,Y	8,10	
			14,18	8	9,10	18
	11			2		

Analytical Threshold: 75 rfu **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 100 rfu

VEQULK GlobalFiler™ (PDF Format)

	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10			2		
	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
4minor	13,15.2	27,35	11,14	X,Y	8,10	25
			14,18	7,8	8,10	16,18
	11			2		

Analytical Threshold: 120 rfu (GF) & 175 rfu (GFE) **Peak Ht. Ratio:** 60% **Stochastic Threshold:** 360 rfu (GF) & 220 rfu (GFE)

TABLE 2

WebCode	Amplification Kits (File Format) (Probabilistic Genotyping)					
	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
Item	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
	Penta D	Penta E	SE33	TH01	TPOX	vWA
	DYS391	DYS570	DYS576	Y Indel		

Item 4 - STR Results

W2KX3H GlobalFiler™ (HID Format)

	10,17.3	18,19	11,14	15,18	11,12	10
	16	12,13	15,22	12	12,13	15,16
4major	14,15	28,29	14,16	X,Y	12,13	23,25
			15	6,7	8,9	16,17
	10			2		
	11,14	20,21	13	15,16	12,13	10
	13,14	13,14	15,16	11,12	11,12	13,18
4minor	13,15.2	27,35	11,14		8,10	25
			14,18	7,8	8,10	16,18
	11					

Analytical Threshold: 100 rfu **Peak Ht. Ratio:** 60 **Stochastic Threshold:** 300 rfu

X2DFBX PowerPlex® Fusion 5C (HID Format)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12		6,7,8	8,9,10	16,17,18
	10,11					

Analytical Threshold: 75 rfu, 75 rfu **Peak Ht. Ratio:** **Stochastic Threshold:**

YCQWHU GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format), (HID Format) (STRmix)

	10,11,14,17.3	18,19,20,21	11,13,14	15,16,18	11,12,13	10
	13,14,16	12,13,14	15,16,22	11,12	11,12,13	13,15,16,18
4	13,14,15,15.2	27,28,29,35	11,14,16	X,Y	8,10,12,13	23,25
	8,9,13	7,11,12	14,15,18	6,7,8	8,9,10	16,17,18
	10,11	16,19	15,17	2		

[No interpretation guidelines provided by this participant.]

YSTR Results

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 1 - YSTR Results									
4DQJ7A	Yfiler™ Plus (HID Format)								
	36,39	17	14,14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
4LKNYB	Yfiler™ Plus (PDF Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
4RABNN	PowerPlex® Y23								
		17	14	12	28	22	10	11	13
1	16	10	11	21		15	16		24
		9	13	18	19		21	11	13
66QMEN	PowerPlex® Y23 (PDF Format)								
		17	14	12	28	22	10	11	13
1	16	10	11	21		15	16		24
		9	13	18	19		21	11	13
6EEGQL	(HID Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
6RNWXQ	PowerPlex® Y23 (HID Format)								
		17	14	12	28	22	10	11	13
1	16	10	11	21		15	16		24
		9	13	18	19		21	11	13
7XAACJ	Yfiler™ Plus (PDF Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
8LAYM9	Yfiler™ Plus, PowerPlex® Y23 (PDF Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9	13	18	19	21	21	11	13
9DEFL6	Yfiler™ Plus (PDF Format)								
	36,39	17	14,14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
9J36YN	PowerPlex® Y23 (HID Format)								
		17	14	12	28	22	10	11	13
1	16	10	11	21		15	16		24
		9	13	18	19		21	11	13

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 1 - YSTR Results									
AZGY3H	PowerPlex® Y23 (PDF Format), (HID Format)								
		17	14	12	28	22	10	11	13
1	16	10	11	21		15	16		24
		9	13	18	19		21	11	13
BLHE2K	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9	13	18	19	21	21	11	13
DBAEM4	Yfiler™ Plus (PDF Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
EKWWF3	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9	13	18	19	21	21	11	13
EP8REK	Yfiler™ Plus (PDF Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9	-	18	19	21	21	-	13
FBLVU2	Yfiler™ Plus, PowerPlex® Y23 (HID Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9	13	18	19	21	21	11	13
GQTFPB	(HID Format)								
							10		
1									
H3F6XF	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
KT4P4C	Yfiler™ Plus (PDF Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
PKXGQ8	Yfiler™ Plus (PDF Format)								
	36,39	17	14,14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9	N/A	18	19	21	21	N/A	13

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 1 - YSTR Results									
PPUVJN	(PDF Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
VEQULK	Yfiler™ Plus (PDF Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
W2KX3H	Yfiler™ Plus (PDF Format)								
	36,39	17	14	12	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9		18	19	21	21		13
X2DFBX	PowerPlex® Y23 (HID Format)								
		17	14	12	28	22	10	11	13
1	16	10	11	21		15	16		24
		9	13	18	19		21	11	13
YCQWHU	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	36,39	17	14	21	28	22	10	11	13
1	16	10	11	21	28	15	16	10	24
	36	9	13	18	19	21	21	11	13

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 2 - YSTR Results									
4DQJ7A	Yfiler™ Plus (HID Format)								
	37,41	15	17,17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
4LKNYB	Yfiler™ Plus (PDF Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
4RABNN									
		15	17,17	13	30	21	11	11	13
2	14	11	11	21		15	16		28
		11	11	19	15		21	13	12
66QMEN	PowerPlex® Y23 (PDF Format)								
		15	17	13	30	21	11	11	13
2	14	11	11	21		15	16		28
		11	11	19	15		21	13	12
6EEGQL	(HID Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
6RNWXQ	Yfiler™ Plus (HID Format)								
		15	17	13	30	21	11	11	13
2	14	11	11	21		15	16		28
		11	11	19	15		21	13	12
7XAACJ	Yfiler™ Plus (PDF Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
8LAYM9	Yfiler™ Plus, PowerPlex® Y23 (PDF Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11	11	19	15	19	21	13	12
9DEFL6	Yfiler™ Plus (PDF Format)								
	37,41	15	17,17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
9J36YN	PowerPlex® Y23 (HID Format)								
		15	17	13	30	21	11	11	13
2	14	11	11	21		15	16		28
		11	11	19	15		21	13	12

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 2 - YSTR Results									
AZGY3H	PowerPlex® Y23 (PDF Format), (HID Format)								
		15	17	13	30	21	11	11	13
2	14	11	11	21		15	16		28
		11	11	19	15		21	13	12
BLHE2K	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11	11	19	15	19	21	13	12
DBAEM4	Yfiler™ Plus (PDF Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
EKWWF3	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11	11	19	15	19	21	13	12
EP8REK	Yfiler™ Plus (PDF Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11	-	19	15	19	21	-	12
FBLVU2	Yfiler™ Plus, PowerPlex® Y23 (HID Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11	11	19	15	19	21	13	12
GQTFPB	(HID Format)								
							11		
2									
H3F6XF	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
KT4P4C	Yfiler™ Plus (PDF Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
PKXGQ8	Yfiler™ Plus (PDF Format)								
	37,41	15	17,17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11	N/A	19	15	19	21	N/A	12

TABLE 3

WebCode	Amplification Kits (File Format)								
Item	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 2 - YSTR Results									
PPUVJN	(PDF Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
VEQULK	Yfiler™ Plus (PDF Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
W2KX3H	Yfiler™ Plus (PDF Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
X2DFBX	PowerPlex® Y23 (HID Format)								
		15	17	13	30	21	11	11	13
2	14	11	11	21		15	16		28
		11	11	19	15		21	13	12
YCQWHU	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,41	15	17	13	30	21	11	11	13
2	14	11	11	21	27	15	16	10	28
	38	11	11	19	15	19	21	13	12

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 3 - YSTR Results									
4DQJ7A	Yfiler™ Plus (HID Format)								
	37,38,41	15,17	17,20	13	25,30	21	8.3,10	11	14
3	14	11	11,12	19,21	32	15	17,22	10	25,28
	37.2,38,40	11		16,19	15,17	20	22		12
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
4LKNYB	Yfiler™ Plus (PDF Format)								
	37,38	15,17	17,20	13	30	21	8.3,10	11	14
3	14	11	11,12	19,21	32	15	17	10	25
	38,40	11		16,19	15,17	20	22		12
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
4RABNN	PowerPlex® Y23 (HID Format)								
		15,16,17	17,20	13	30	21	10	11	13,14
3	14	11	11,12	19		15	17		25,28
		11	11	16	15,17		21,22	13	12
66QMEN	PowerPlex® Y23 (PDF Format)								
		[16],17	17,20	13	30	21	10	11	[13],14
3	14	11	[11],12	19		15	17		25,[28]
		11	11	16	[15],17		[21],22	13	12
		17	17,20	13	30	21	10	11	14
3major	14	11	12	19		15	17		25
		11	11	16	17		22	13	12
		16							13
3minor			11						28
					15		21		
6EEGQL	(HID Format)								
	37,38	15,17	17,20	13	30	21	8.3,10	11	14
3	14	11	11,12	19,21	32	15	17	10	25,28
	38,40	11		16,19	15,17	20	22		12
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
		15					8.3		
3minor			11	21					28
	38			19	15				
6RNWXQ	PowerPlex® Y23 (HID Format)								
		17	17,20	13	30	21	10	11	14
3	14	11	12	19		15	17		25
		11	11	16	17		22	13	12

TABLE 3

WebCode	Amplification Kits (File Format)								
Item	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 3 - YSTR Results									
7XAACJ	Yfiler™ Plus (PDF Format)								
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
		15			25		8.3		
3minor			11	21					
	38			19	15				
8LAYM9	Yfiler™ Plus (PDF Format)								
	37,38	17	17,20	13	30	21	10	11	14
3	14	11	12	19	32	15	17	10	25
	40	11	11	16	17	20	22	13	12
9DEFL6	Yfiler™ Plus (PDF Format)								
	37,38	(15),17	17,20	13	30	21	(8.3),10	11	14
3	14	11	(11),12	19,(21)	32	15	17	10	25
	(38),40	11		16,(19)	(15),17	20	22		12
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
		15					8.3		
3minor			11	21					
	38			19	15				
9J36YN	PowerPlex® Y23 (HID Format)								
		15,17	17,20	13	30	21	10	11	13,14
3	14	11	11,12	19		15	17		25,28
		11	11	16	15,17		21,22	13	12
		17	17,20	13	30	21	10	11	14
3major	14	11	12	19		15	17		25
		11	11	16	17		22	13	12
		15							13
3minor			11						28
					15		21		
AZGY3H	PowerPlex® Y23 (PDF Format), (HID Format)								
		15,16,17	17,20	13	30	21	10	11	13,14
3	14	11	11,12	19		15	17		25,28
		11	11	16	15,17		21,22	13	12
		17	-	13	30	21	10	11	14
3major	14	11	12	19		15	17		25
		11	11	16	17		22	13	12
		15,16	-	13	30	21	10	11	13
3minor	14	11	11	19		15	17		28
		11	11	16	15		21	13	12

TABLE 3

WebCode	Amplification Kits (File Format)								
Item	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 3 - YSTR Results									
BLHE2K	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11	11	16	17	20	22	13	12
		15			25		8.3		
3minor			11	21					
	38			19	15				
DBAEM4	Yfiler™ Plus (PDF Format)								
	37,38	15,17	17,20	13	30	21	8.3,10	11	14
3	14	11	11,12	19,21	32	15	17	10	25
	38,40	11		16,19	15,17	20	22		12
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
EKWWF3	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,38	17	17,20	13	30	21	10	11	14
3	14	11	12	19	32	15	17	10	25
	40	11	11	16	17	20	22	13	12
EP8REK	Yfiler™ Plus (PDF Format)								
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11	-	16	17	20	22	-	12
	-	15	-	-	25	-	8.3	-	-
3minor	-	-	11	21	-	-	-	-	-
	38	-	-	19	15	-	-	-	-
FBLVU2	Yfiler™ Plus, PowerPlex® Y23 (HID Format)								
	37,38	17	17,20	13	30	21	10	11	14
3	14	11		19	32	15	17	10	25
	40	11	11	16	17	20	22	13	12
GQTFPB	(HID Format)								
							10		
3									
H3F6XF	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,38,41	15,17	17,20	13	25,30	21	8.3,10	11	14
3	14	11	11,12	19,21	32	15	17	10	25,28
	38,40	11		16,19	15,17	20	22		12

TABLE 3

WebCode	Amplification Kits (File Format)								
Item	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 3 - YSTR Results									
KT4P4C	Yfiler™ Plus (PDF Format)								
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
		15			25		8.3		
3minor			11	21					
	38			19	15				
PKXGQ8	Yfiler™ Plus (PDF Format)								
	37,38	15,17	17,20	13	30	21	8.3,10	11	14
3	14	11	12	19,21	32	15	17	10	25
	38,40	11	N/A	16,19	15,17	20	22	N/A	12
PPUVJN	(PDF Format)								
	37,38	15,17	17,20	13	25,30	21	8.3,10	11	14
3	14	11	11,12	19,21	32	15	17	10	25
	38,40	11		16,19	15,17	20	22		12
	37,38	17	17	13	30	21	10	11	14
3major		11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
			20		25				
3minor				21					
	38				15				
VEQULK	Yfiler™ Plus (PDF Format)								
	37,38	15,17	17,20	13	30	21	8.3,10	11	14
3	14	11	11,12	19,21	32	15	17	10	25
	38,40	11		16,19	15,17	20	22		12
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
W2KX3H	Yfiler™ Plus (PDF Format)								
	37,38	15,17	17,20	13	30	21	8.3,10	11	14
3	14	11	11,12	19,21	32	15	17	10	25
	38,40	11		16,19	15,17	20	22		12
	37,38	17	17,20	13	30	21	10	11	14
3major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
X2DFBX	PowerPlex® Y23 (HID Format)								
		16,17	17,20	13	30	21	10	11	13,14
3	14	11	11,12	19		15	17		25,28
		11	11	16	15,17		21,22	13	12

TABLE 3

WebCode	Amplification Kits (File Format)								
Item	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 3 - YSTR Results									
YCQWHU									
	37,38	17	17,20	13	30	21	10	11	14
3	14	11	12	19	32	15	17	10	25
	40	11	11	16	17	20	22	13	12

TABLE 3

WebCode	Amplification Kits (File Format)								
Item	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 4 - YSTR Results									
4DQJ7A	Yfiler™ Plus (HID Format)								
	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11		16,19	15,17	19,20	21,22		12
	37,38	17	17,_	13	30	21	10	11	14
4major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
	37,41	15		13	30	21	11	11	13
4minor	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
4LKNYB	Yfiler™ Plus (PDF Format)								
	37,38	17	17,20	13	30	21	10	11	14
4major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
	37,41	15	17	13	30	21	11	11	13
4minor	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
4RABNN	PowerPlex® Y23								
		15,17	17,20	13	29,30	21	10,11	11	13,14
4	14	11	11,12	19,21		15	17		25,28
		11	11	16,19	15,17		21,22	13	12
66QMEN	PowerPlex® Y23 (PDF Format)								
		17	17,20	13	30	21	10,[11]	11	[13],14
4	14	11	[11],12	19,[21]		15	17		25,[28]
		11	11	16,[19]	[15],17		[21],22	13	12
		17	17,20	13	30	21	10	11	14
4major	14	11	12	19		15	17		25
		11	11	16	17		22	13	12
							11		13
4minor			11	21					28
				19	15		21		
6EEGQL	(HID Format)								
	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11		16,19	15,17	19,20	21,22		12
7XAACJ	Yfiler™ Plus								
	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11		16,19	15,17	19,20	21,22		12

TABLE 3

WebCode	Amplification Kits (File Format)								
Item	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 4 - YSTR Results									
8LAYM9	PowerPlex® Y23								
	37,38,41	15,17	17,20	13	29,30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11	11	16,19	15,17	19,20	21,22	13	12
9DEFL6	Yfiler™ Plus (PDF Format)								
	37,38,(41)	(15),17	17,20	13	30	21	10,(11)	11	(13),14
4	14	11	(11),12	19,(21)	(27),32	15	(16),17	10	25,(28)
	(38),40	11		16,(19)	(15),17	(19),20	(21),22		12
	37,38	17	17,20	13	30	21	10	11	14
4major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
	41	15					11		13
4minor			11	21	27		16		28
	38			19	15	19	21		
9J36YN	PowerPlex® Y23 (HID Format)								
		15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21		15	16,17		25,28
		11	11	16,19	15,17		21,22	13	12
		17	17,20	13	30	21	10	11	14
4major	14	11	12	19		15	17		25
		11	11	16	17		22	13	12
		15					11		13
4minor			11	21			16		28
				19	15		21		
AZGY3H	PowerPlex® Y23 (PDF Format), (HID Format)								
		15,17	17,20	13	29,30	21	10,11	11	13,14
4	14	11	11,12	19,21		15	16,17		25,28
		11	11	16,19	15,17		21,22	13	12
		17	-	13	29	21	10	11	14
4major	14	11	12	19		15	17		25
		11	11	16	17		22	13	12
		15	-	13	30	21	11	11	13
4minor	14	11	11	21		15	16		28
		11	11	19	15		21	13	12
BLHE2K	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,38	17	17,20	13	30	21	10	11	14
4major	14	11	12	19	32	15	17	10	25
	40	11	11	16	17	20	22	13	12
	41	15					11		13
4minor			11	21	27		16		28
	38			19	15	19	21		

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 4 - YSTR Results									
DBAEM4	Yfiler™ Plus (PDF Format)								
	37,38	17	17,20	13	30	21	10	11	14
4major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
	37,41	15	17	13	30	21	11	11	13
4minor	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
EKWWF3	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11	11	16,19	15,17	19,20	21,22	13	12
EP8REK	Yfiler™ Plus (PDF Format)								
	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11	-	16,19	15,17	19,20	21,22	-	12
FBLVU2	Yfiler™ Plus, PowerPlex® Y23 (HID Format)								
		15,17	17,20	13		21	10,11	11	13,14
4	14	11	11,12	19,21		15			25,28
		11		16,19	15,17		21,22		12
GQTFPB	(HID Format)								
							10,11		
4									
H3F6XF	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11		16,19	15,17	19,20	21,22		12
KT4P4C	Yfiler™ Plus								
	37,38	17	17	13	30	21	10	11	14
4major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
	41	15	20				11		13
4minor			11	21	27		16		28
	38			19	15	19	21		
PKXGQ8	Yfiler™ Plus (PDF Format)								
	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11	N/A	16,19	15,17	19,20	21,22	N/A	12

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4
Item 4 - YSTR Results									
PPUVJN	(PDF Format)								
	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11		16,19	15,17	19,20	21,22		12
	37,38	17	17	13	30	21	10	11	14
4major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
	41		20				11		13
4minor			11	21	27				28
	38			19	15		21		
VEQULK	Yfiler™ Plus (PDF Format)								
	37,38	17	17,20	13	30	21	10	11	14
4major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
	37,41	15	17	13	30	21	11	11	13
4minor	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
W2KX3H	Yfiler™ Plus (PDF Format)								
	37,38	17	17,20	13	30	21	10	11	14
4major	14	11	12	19	32	15	17	10	25
	40	11		16	17	20	22		12
	41	15	17	13	30	21	11	11	13
4minor	14	11	11	21	27	15	16	10	28
	38	11		19	15	19	21		12
X2DFBX	PowerPlex® Y23 (HID Format)								
		17	17,20	13	29,30	21	10,11	11	13,14
4	14	11	11,12	19,21		15	17		25,28
		11	11	16,19	15,17		21,22	13	12
YCQWHU	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	37,38,41	15,17	17,20	13	30	21	10,11	11	13,14
4	14	11	11,12	19,21	27,32	15	16,17	10	25,28
	38,40	11	11	16,19	15,17	19,20	21,22	13	12

DNA Conclusions

Based on the examination of the DNA profiles provided, could the Victim (Item 1) and/or the Suspect (Item 2) be included as a possible contributor to the questioned Item?

TABLE 4

	Item 3 Conclusion			Item 4 Conclusion		
WebCode	# of Contributors	Item 1	Item 2	# of Contributors	Item 1	Item 2
4BZH37	3	Excluded	Included	2	Excluded	Included
4DQJ7A	4	Excluded	Included	3	Excluded	Included
4LKNYB	3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable	2	Excluded	Included
4RABNN	Evaluated as 3	Excluded	Included	Evaluated as 2	Excluded	Included
66QMEN	2	Excluded	Excluded	2	Excluded	Included
6EEGQL	3	Excluded	Inconclusive / Uninterpretable	2	Excluded	Included
6RNWXQ	3	Excluded	Excluded	at least 2	Excluded	Included
7DLT9P	2	Excluded	Excluded	2	Excluded	Included
7VFLTN	Minimum of 3	Excluded	Inconclusive / Uninterpretable	2	Excluded	Included
7XAACJ	3	Excluded	Inconclusive / Uninterpretable	2	Excluded	Included
8LAYM9	3	Excluded	Excluded	2	Excluded	Included
9DEFL6	3	Excluded	Excluded	2	Excluded	Included
9J36YN	3	Excluded	Inconclusive / Uninterpretable	2	Excluded	Included
AZGY3H	3	Excluded	Excluded	2	Excluded	Included
BLHE2K	at least three contributors	Excluded	Inconclusive / Uninterpretable	at least 2 contributors	Excluded	Included
BQFTU2	3	Excluded	Excluded	2	Excluded	Included
DBAEM4	at least 3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable	2	Excluded	Included
EKWWF3	At least 2	Excluded	Excluded	2	Excluded	Included
EP8REK	3	Excluded	Inconclusive / Uninterpretable	2	Excluded	Included
ETP62T	3	Inconclusive / Uninterpretable	Included	3	Excluded	Included
FBLVU2	2	Excluded	Excluded	2	Excluded	Included

TABLE 4

WebCode	Item 3 Conclusion # of Contributors	Item 3 Conclusion Item 1	Item 3 Conclusion Item 2	Item 4 Conclusion # of Contributors	Item 4 Conclusion Item 1	Item 4 Conclusion Item 2
GQTFPB	3	Excluded	Included	2	Excluded	Included
H3F6XF	at least 2 individuals	Excluded	Inconclusive / Uninterpretable	at least 2 individuals	Excluded	Included
HTEFNR	3	Excluded	Included	2	Excluded	Included
HVLR7T	3	Excluded	Included	2	Excluded	Included
JFPX9T	3	Excluded	Included	2	Excluded	Included
KT4P4C	3	Excluded	Included	2	Excluded	Included
PKXGQ8	3 or more	Excluded	Excluded	2	Excluded	Included
PPUVJN	3	Excluded	Included	2	Excluded	Included
RLKRLH	3	Excluded	Included	2	Excluded	Included
VEQULK	at least 3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable	2	Excluded	Included
W2KX3H	at least 3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable	2	Excluded	Included
X2DFBX	3	Excluded	Excluded	2	Excluded	Included
YB3JZC	3	Excluded	Excluded	2	Excluded	Included
YCQWHU	3	Excluded	Excluded	2	Excluded	Included

Conclusions Response Summary

Participants reporting conclusions: 35

Based on the examination of the DNA profiles provided, could the Victim (Item 1) and/or the Suspect (Item 2) be included as a possible contributor to the questioned Item?

Responses	Item 3 Item 1	Item 3 Item 2	Item 4 Item 1	Item 4 Item 2
Included	**0**	**11**	**0**	**35**
Excluded	**30**	**13**	**35**	**0**
Inconclusive	**5**	**11**	**0**	**0**
No Response	**0**	**0**	**0**	**0**
Total	**35**	**35**	**35**	**35**

Statistical Analysis for Item 3

TABLE 5

WebCode	Item 3 Methods & Results
4DQJ7A	**Method(s)**: Likelihood Ratio **Stats Analysis:** It is 8,36e7 times more likely to observe the DNA profile if the mixed stain on the shirt (ITEM 3) originates from ITEM 2 (Suspect) and three unknown persons, than if it originated from four unknown persons, unrelated to ITEM 2 (Suspect). Theta is 0.01, probability of drop out is 0.12 and probability of drop in is 0.05.
4RABNN	**Method(s)**: Likelihood Ratio **Stats Analysis:** The DNA profile from Item 3 Shirt consists of a mixture of DNA. PG was performed on the STR profile using the following assumptions and competing hypotheses. Assuming three contributors and comparing the following hypotheses: Hp: Item 1 Victim and two unknown, unrelated individuals Hd: Three unknown, unrelated individuals. It is 2.373E+12 (two trillion three hundred seventy-three Billion) times more likely to obtain these results if three unknown, unrelated individuals are contributors than if Item 1 Victim and two unknown, unrelated individuals are contributors. The DNA profile from Shirt consists of a mixture of DNA. Assuming three contributors and comparing the following hypotheses: Hp: Item 2 Suspect and two unknown, unrelated individuals Hd: Three unknown, unrelated individuals. It is 500 times more likely to obtain these results if Item 2 Suspect and two unknown, unrelated individuals are contributors than if three unknown, unrelated individuals are contributors.
6EEGQL	**Method(s)**: Likelihood Ratio **Stats Analysis:** LR = 7,38517E02. Hp (suspect + 2 unknown) vs. Hd (3 unknown).
6RNWXQ	**Method(s)**: Likelihood Ratio **Stats Analysis:** Autosomal: The DNA results are extremely less likely if both the victim and subject are included in the mixture DNA profile obtained from Item 3 than if the victim and an unknown individual were included in the mixture DNA profile. (Log10 LR = -465.635). The DNA results are extremely less likely if both the victim and subject are included in the mixture DNA profile obtained from Item 3 than if the subject and an unknown individual were included in the mixture DNA profile. (Log10 LR = -467.381). Y-STR: Both the victim and the suspect are excluded from the Y-STR DNA profile.
9DEFL6	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** Stutter percentages as per our in-house validated parameters.
BLHE2K	**Method(s)**: Likelihood Ratio **Stats Analysis:** Autosomal Number of Contributors: ≥3. Statistical Method Used: Likelihood Ratio. ITEM 1 compared to ITEM 3 Assuming three contributors, Item 1 (reference sample (Male Victim - Caucasian)) is EXCLUDED as a potential contributor to the DNA mixture developed from Item 3 (stain on the shirt). ITEM 2 compared to ITEM 3 and ITEM 3 (MAJOR) Assuming three contributors, Item 2 (reference sample (Male Suspect - Black)) is INCONCLUSIVE with regard to the DNA mixture developed from Item 3 (stain on the shirt). Assuming one MAJOR contributor, Item 2 (reference sample (Male Suspect - Black)) is EXCLUDED as a potential MAJOR contributor to the DNA mixture developed from Item 3 (stain on the shirt). YSTR Number of Contributors: ≥2 Males. ITEM 1 compared to ITEM 3: Assuming one MAJOR and one MINOR male contributor, Item 1 (reference sample (Male Victim - Caucasian)) is EXCLUDED as a potential contributor to the YSTR DNA mixture developed from Item 3 (stain on the shirt). ITEM 2 compared to ITEM 3: Assuming one MAJOR and one MINOR male contributor, Item 2 (reference sample (Male Suspect - Black)) is EXCLUDED as a potential contributor to the YSTR DNA mixture developed from Item 3 (stain on the shirt).
BQFTU2	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** Because neither individual that known reference samples are provided for were included, no statistical analysis was performed.

TABLE 5

WebCode	Item 3 Methods & Results
DBAEM4	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** A mixed DNA profile of one major contributor (male) and at least two minor contributors was developed from "Item 3". The DNA profile obtained from reference sample of "Item 1" and "Item 2" are excluded from being the major contributor to this mixed DNA profile. However, the minor contributor cannot be conclusively distinguished. The source of this unknown male DNA profile wan identified as "Male 1".
ETP62T	**Method(s)**: Likelihood Ratio **Stats Analysis:** The DNA typing results detected in Item 3 are consistent with an unknown male as the major contributor (unknown #1) with a smaller amount of DNA from Item 2 and an unknown minor contributor. The probability of observing this DNA mixture is 4.93 million (4.93 E6) times more likely if it originated from Item 2 and 2 unknown contributors then if it originated from 3 unknown random contributors. It is inconclusive whether Item 1 is a contributor to the DNA mixture as the likelihood ratio does not provide sufficient support for inclusion or exclusion. This analysis provides very strong support for the proposition that Item 2 is a contributor to the Item 3 DNA mixture. A CODIS eligibility form would additionally be filled out indicating that an email was sent to the detective on the case inquiring about the owner of the shirt and what significance the uknown individual plays in the role of the crime, if known.
GQTFPB	**Method(s)**: Likelihood Ratio **Stats Analysis:** The DNA profile from Shirt consists of a mixture of DNA. Assuming three contributors and comparing the following hypotheses: Hp: Victim and two unknown, unrelated individuals. Hd: Three unknown, unrelated individuals. It is 2.373E+12 (Two Trillion Three Hundred Seventy-Three Billion) times more likely to obtain these results if three unknown, unrelated individuals are contributors than if Victim and two unknown, unrelated individuals are contributors. (Run 28039) The DNA profile from Shirt consists of a mixture of DNA. Assuming three contributors and comparing the following hypotheses: Hp: Suspect and two unknown, unrelated individuals. Hd: Three unknown, unrelated individuals. It is 500 times more likely to obtain these results if Suspect and two unknown, unrelated individuals are contributors than if three unknown, unrelated individuals are contributors. (Run 28040)
H3F6XF	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** Item #3 (stain on shirt) is a mixture of at least 2 individuals. Item #1 (victim) is excluded as a contributor to the DNA profiles from Item #3 (stain on shirt). Based upon the complexity of the overall DNA profiles from item #3, the results are not suitable for comparison to item #2 (suspect). Probabilistic Genotyping may be used to aid in the interpretation of item #3 upon request. Any statistical correlations will be performed or outsourced upon request.
JFPX9T	**Method(s)**: Likelihood Ratio **Stats Analysis:** The LR value calculated for this mixture in relation to the Suspect was 3.58E5 to 1, which means it is 3.58E5 times more likely that the observed DNA profile being a mixture originating from the Suspect and two unrelated individuals than if it originating from three unrelated individuals selected at random from the local [Location Identifying Population].
KT4P4C	**Method(s)**: Likelihood Ratio **Stats Analysis:** The autosomal mixed DNA profile obtained is greater than 100 billion times more likely if the suspect and two other individuals are contributors to the DNA profile than if three unknown individuals from the Caucasian population are. POI and VIC can be excluded as the source of the major DNA profile detected in the Y-STR DNA profile obtained.
PPUVJN	**Method(s)**: Likelihood Ratio **Stats Analysis:** [Moved from Item 3 Other Statistical Analysis Method: "6.0736E8."]

TABLE 5

WebCode	Item 3 Methods & Results
VEQULK	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** A mixed DNA profile of one major contributor (male) and at least two minor contributors was developed from "Item 3". The DNA profile obtained from the reference samples of "Item 1" and "Item 2" are excluded from being the major contributor to this mixed DNA profile. However, the minor contributors cannot be conclusively distinguished. The source of this unknown male DNA profile was identified as “Male 1”.
W2KX3H	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** A mixed DNA profile of a major and minor contributors was developed from bloodstain on Item 3. DNA profile obtained from Item 1 and Item 2 are excluded as being the major contributor to this mixed DNA profile, thus indicating that the DNA identified originated from a different individual. I identified the major source as "UNKKNOWN 1".
YCQWHU	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** Item 1 Victim and Item 2 Suspect are excluded as contributors to the DNA profile from Item 3.

Statistical Analysis for Item 4

TABLE 6

WebCode	Item 4 Methods & Results
4DQJ7A	**Method(s)**: Likelihood Ratio **Stats Analysis**: It is 1,39e14 times more likely to observe the DNA profile if the mixed stain from the victim´s car key (ITEM 4) originates from ITEM 2 (Suspect) and two unknown persons, than if it originates from three unknown persons, unrelated to ITEM 2 (Suspect). Theta is 0.01, probability of drop out is 0.39 and probability of drop in is 0.05.
4LKNYB	**Method(s)**: Likelihood Ratio **Stats Analysis**: The mixed DNA profile are 36 sextillion (36 x 10e21), 160 sextillion (160 x 10e21) and 3.8 sextillion (3.8 x 10e21) TIMES more likely; IF they originated from the source represented by Item 2 and one unknown unrelated individual RATHER THAN; IF they originated from two unknown unrelated individuals as calculated based on the [Location Identifying] DNA population databases respectively.
4RABNN	**Method(s)**: Likelihood Ratio **Stats Analysis**: The DNA profile from Item 4 Keys consists of a mixture of DNA. Item 1 Victim is visually excluded from the mixture. PG was performed on the STR profile using the following assumptions and competing hypotheses. Assuming two contributors and comparing the following hypotheses: Hp: Item 2 Suspect and one unknown, unrelated individual; Hd: Two unknown, unrelated individuals. It is 4.674E+28 (forty-six octillion seven hundred forty septillion) times more likely to obtain these results if Item 2 Suspect and one unknown, unrelated individual are contributors than if two unknown, unrelated individuals are contributors.
66QMEN	**Method(s)**: Likelihood Ratio **Stats Analysis**: LR = 7,145*e+17. ITEM 2 + 1 NN / 2 NN.
6EEGQL	**Method(s)**: Likelihood Ratio **Stats Analysis**: LR = 3,11231E018. Hp (suspect + unknown) vs. Hd (2 unknown).
6RNWXQ	**Method(s)**: Likelihood Ratio **Stats Analysis**: PPF: The DNA results are near equally likely if the subject and an unknown individual are included in the mixture DNA profile obtained from Item 4 then if the subject and two unknown individuals were included in the mixture DNA profile. (Log10 LR = 0.0). GF: The victim is excluded. The suspect is included as a contributor to the mixture profile. (Autosomal: The major contributor is an unknown individual. The minor contributor is consistent with the suspect (Item 2).) LR: The probability of observing the evidence assuming that the suspect (Item 2) contributed to the DNA is 4.56x10 ^ 12 times greater than the probability of observing the evidence assuming that someone else was the contributor. RMP: The probability of randomly selecting an unrelated individual with the same DNA profile as the minor contributor is 1 in a number greater than the world population for the African-American, Caucasian, Hispanic, and Asian populations.
7DLT9P	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: Assuming only 2 contributors Item 1 is excluded. Item 2 could not be excluded as a minor contributor, however since we have not validated LR the report would state that LR might be of value and if the agency wanted stats then the sample may be forwarded to another lab that performs LR for re-analysis and/or statistical interpretation.
7XAACJ	**Method(s)**: Likelihood Ratio **Stats Analysis**: LRmix Studio v.1.2.3 LR=1,22E018 (Drop out probability: 0.14)
8LAYM9	**Method(s)**: Likelihood Ratio **Stats Analysis**: 45.311.807.111.148.700.000.000.000

TABLE 6

WebCode	Item 4 Methods & Results
9DEFL6	**Method(s)**: Likelihood Ratio **Stats Analysis**: LR= 1.9821E17 through LRmix Studio by [Names]
9J36YN	**Method(s)**: Likelihood Ratio **Stats Analysis**: 3,8E16
AZGY3H	**Method(s)**: Random Match Probability **Stats Analysis**: The DNA profile for the minor contributor of CTS-22-5882-4 is consistent with the DNA profile of CTS-22-5882-2. Therefore, the individual represented by the reference sample, item CTS-22-5882-2 (suspect), cannot be excluded as a contributor of the DNA profile obtained from the victim's car keys (item CTS-22-5882-4). The probability of selecting a random unrelated individual having a DNA profile identical to CTS-22-5882-2 at the loci observed is 1 in 1.27x1031 for African Americans, 1 in 1.66x1038 for Caucasian Americans, 1 in 7.46x1037 for Hispanic Americans, and 1 in 8.48x1040 for Asian Americans.
BLHE2K	**Method(s)**: Likelihood Ratio, Profile and Match Probabilities for YSTR haplotypes **Stats Analysis**: Autosomal Number of Contributors: ≥2. Statistical Method Used: Likelihood Ratio. ITEM 1 compared to ITEM 4 Assuming two contributors, Item 1 (reference sample (Male Victim - Caucasian)) is EXCLUDED as a potential contributor to the DNA mixture developed from Item 4 victim's car key). ITEM 2 compared to ITEM 4 and ITEM 4 (MAJOR) Assuming two contributors, Item 2 (reference sample (Male Suspect - Black)) is NOT EXCLUDED as a potential contributor to the DNA mixture developed from Item 4 (victim's car key). Statistical Analysis: Under the assumption that the SUSPECT and one Unknown/Unrelated person selected at random are contributors to this mixture, the likelihood of observing this mixed source profile is ≥1,000,000 times greater (actual LR available upon request) than if it is assumed that two Unknown/unrelated persons selected at random from the general population are contributors to this mixed-source sample. Assuming one MAJOR contributor, Item 2 (reference sample (Male Suspect - Black)) is EXCLUDED as a potential MAJOR contributor to the DNA mixture developed from Item 4 (victim's car key). YSTR Number of Contributors: ≥2 Males. Statistical Method Used: Profile and Match Probabilities YHRD. ITEM 1 compared to ITEM 4 Assuming one MAJOR and one MINOR male contributor, Item 1 (reference sample (Male Victim - Caucasian)) is EXCLUDED as a potential contributor to the YSTR DNA mixture developed from Item 4 (victim's car key). ITEM 2 compared to ITEM 4 (MAJOR) and ITEM 4 (MINOR) Assuming one MAJOR male contributor, Item 2 (reference sample (Male Suspect - Black)) is EXCLUDED as a potential MAJOR contributor to the YSTR DNA mixture developed from Item 4 (victim's car key). Assuming one MINOR male contributor, Item 2 (reference sample (Male Suspect - Black)) is NOT EXCLUDED as a potential MINOR contributor to the YSTR DNA mixture developed from Item 4 (victim's car key). Statistical Analysis: Based on a search of the YHRD Database on 1 Dec 2022 the Profile Probability for the MINOR contributor alleles (excluding locus DYF387S1) is: Found no match in 2,261 Haplotypes (95% UCI: 1 in 755) in [Country] (African American). Found no match in 2,537 Haplotypes (95% UCI: 1 in 847) in [Country] (Asian American). Found no match in 2,418 Haplotypes (95% UCI: 1 in 808) in [Country] (Caucasian American). Found no match in 2,163 Haplotypes (95% UCI: 1 in 723) in [Country] (Hispanic American). Found no match in 2,283 Haplotypes (95% UCI: 1 in 763) in [Country] (Native American). Found no match in 11,662 Haplotypes (95% UCI: 1 in 3,893) in [Country] (Overall). The Theta-corrected Match Probability for the MINOR contributor alleles (excluding locus DYF387S1) is: Given a theta-value of 2.0x10-04 and a 95%% UCI of the combined Haplotype frequency of 1 in 3,131 (no matches in 9,379 Haplotypes at U.S. subpopulations without Native American), the corrected Match Probability is 1 in 1,926. Given a theta-value of 6.0x10-04 and a 95%% UCI of the combined Haplotype frequency of 1 in 3,893 (no matches in 11,662 Haplotypes at [Country] subpopulations with Native American), the corrected Match Probability is 1 in 1,167.

TABLE 6

WebCode	Item 4 Methods & Results
BQFTU2	**Method(s)**: Likelihood Ratio **Stats Analysis**: The DNA mixture obtained from this item is consistent with the combined DNA profiles from the Suspect (Item 2) and unidentified male #1. This mixed DNA profile is approximately 106 trillion (1.06 x 10^14) times more likely to be observed if the Suspect (Item 2) and an unknown male individual are the contributors than if two random, unrelated African American males are the contributors; approximately 1.17 quintillion (1.17 x 10^18) times more likely than if two random, unrelated Caucasian males are the contributors; and approximately 73.1 quintillion (7.31 x 10^19) times more likely than if two random, unrelated Southwestern Hispanic males are the contributors.
DBAEM4	**Method(s)**: Likelihood Ratio **Stats Analysis**: A mixed DNA profile of two contributors was developed from "Item 4". The DNA profile obtained from the reference sample of "Item 2" and the source of "Male 1" are being the minor and major contributor respectively to this mixed DNA profile. The mixed DNA profile are 36 sextillion (36 x 10e21), 160 sextillion (160 x 10e21) and 3.8 sextillion (3.8 x 10e21) TIMES more likely; IF they originated from “Item 2” and one unknown unrelated individual RATHER THAN; IF they originated from two unknown unrelated individual as calculated based on the [Location Identifying] DNA population databases respectively.
EKWWF3	**Method(s)**: Likelihood Ratio **Stats Analysis**: Item 2 and at least one unknown person cannot be excluded as possible contributors to the DNA obtained from Item 4. Is 120.834.102.858.923.000.000.000.000.000.000.000.000. 000.000.000.000 times more probable the genetic finding if the DNA obtained from Item 4 comes from Item 2 and an unknown person than if it comes from two(2) person at random from the reference population.
EP8REK	**Method(s)**: Likelihood Ratio **Stats Analysis**: LR 1,97727E18 for item 2, dropout: 0,1
ETP62T	**Method(s)**: Likelihood Ratio **Stats Analysis**: The DNA typing results detected in Item 4 are consistent with an unknown male as the major contributor (unknown #1) with a smaller amount of DNA from Item 2 and a possible additional unknown minor contributor. Item 1 is excluded as a contributor to the DNA mix in Item 4. The probability of observing this DNA mixture is 498 octillion (498 E27) times more likely if it originated from Item 2 and 2 unknown contributors than if it originated from 3 unknown random contributors. This provides very strong support for the proposition that Item 2 is a contributor to the DNA mixture obtained from Item 4. Due to limited data, no further conclusions can be reached about the possible additional unknown contributor. No futher conclusions can be reached about the unknown major contributor at this time. A CODIS eligibility form would additionally be filled out indicating that an email was sent to the detective on the case inquiring aboutt what significance the uknown individual plays in the role of the crime, if known.
FBLVU2	**Method(s)**: Likelihood Ratio **Stats Analysis**: 49.299.100.000.000.000.000.000.000
GQTFPB	**Method(s)**: Likelihood Ratio **Stats Analysis**: The DNA profile from KEYS consists of a mixture of DNA. Victim can be visually excluded as a contributor to this mixture. The DNA profile from KEYS consists of a mixture of DNA. Assuming two contributors and comparing the following hypotheses: Hp: Suspect and one unknown, unrelated individual; Hd: Two unknown, unrelated individuals. It is 4.674E+28 (Forty-Six Octillion Seven Hundred Forty Septillion) times more likely to obtain these results if Suspect and one unknown, unrelated individual are contributors than if two unknown, unrelated individuals are contributors. (Run 28042)

TABLE 6

WebCode	Item 4 Methods & Results
H3F6XF	**Method(s)**: Counting Method / LR (YSTR) **Stats Analysis**: Item #4 (sample from victim's car key) is a mixture of at least 2 individuals. Item #1 (victim) is excluded as a contributor to the DNA profiles from Item #4 (sample from victim's car key). Item #2 (suspect) is included as a contributor to the DNA profiles from item #4. Probabilistic Genotyping may be used to aid in the statistical correlations of the STR results upon request. Given the YSTR mixture profile, the likelihood of observing the given profile under the hypothesis of the donorship of the suspect is approx. 15,939 times more likely than observing the given profile under the hypothesis of the non-donorship.
JFPX9T	**Method(s)**: Likelihood Ratio **Stats Analysis**: The LR value calculated for this mixture in relation to the Suspect was 8.57E32 to 1, which means it is 8.57E32 times more likely that the observed DNA profile being a mixture originating from the Suspect and an unrelated individual than if it originating from two unrelated individuals selected at random from the local [Location Identifying Population].
KT4P4C	**Method(s)**: Likelihood Ratio **Stats Analysis**: The autosomal mixed DNA profile obtained is greater than 100 billion times more likely if the suspect and another individual are contributors to the DNA profile than if two unknown individuals from the Caucasian population are. Mixed Y STR DNA profile obtained is not suitable for statistical evaluation
PPUVJN	**Method(s)**: Likelihood Ratio, 3.3327E26
VEQULK	**Method(s)**: Likelihood Ratio **Stats Analysis**: A mixed DNA profile of two contributors was developed from "Item 4". The DNA profile obtained from the reference sample of "Item 2" and the source of "Male 1" is being the minor and major contributor respectively to this mixed DNA profile. The mixed DNA profile are 36 sextillion (36 x 10e21), 160 sextillion (160 x 10e21) and 3.8 sextillion (3.8 x 10e21) TIMES more likely; IF they originated from "Item 2" and one unknown individual RATHER THAN; IF they originated from two unknown unrelated individual as calculated based on the [Location Identifying] DNA population databases respectively.
W2KX3H	**Method(s)**: Likelihood Ratio **Stats Analysis**: A mixed DNA profile of a major and a minor contributor was developed from bloodstain on Item 4. DNA profile obtained from "UNKNOWN 1" and "Item 2" are included as being the major and minor contributor to this mixed DNA profile. This mixed DNA profile are 140 quadrillion (140 x 10^15), 180 quadrillion (180 x 10^15) dan 220 quadrillion (220 x 10^15) TIMES more likely;IF they originated from “ITEM 2” and an unknown unrelated individual RATHER THAN;IF the originated from two unknown unrelated individual as calculated based on [Location Identifying] DNA population databases respectively.
X2DFBX	**Method(s)**: Likelihood Ratio **Stats Analysis**: The genetic profile obtained from Item 4 is interpreted as a mixture of DNA from 2 contributors. Given this genetic profile, it is 3.9 trillion times more likely to observe this genetic profile if Item 2 (suspect) and one unknown individual are the contributors than if two unknown individuals are the contributors. This provides very strong support that Item 2 (suspect) is included as a contributor to this mixture of DNA.
YCQWHU	**Method(s)**: Likelihood Ratio **Stats Analysis**: The DNA profile from item 4 is 1 billion times more likely if it originated from Item 2 Suspect and one unknown, unrelated contributor than if it originated from 2 unknown, unrelated contributors.

Databases Used

TABLE 7

WebCode	Databases Used
4DQJ7A	Item 3: Rare Allele: 0,0007. We used frequencies based on [Location Identifying Population] (available at https://strider.online/frequencies). At STRiDER there are frequencies combined from GlobalFiler and NGM, in test we used only frequencies from GlobalFiler (population of 700 people). Item 4: Rare Allele: 0,0007. We used frequencies based on [Location Identifying Population] (available at https://strider.online/frequencies). At STRiDER there are frequencies combined from GlobalFiler and NGM, in test we used only frequencies from GlobalFiler (population of 700 people).
4LKNYB	Item 3: [No databases were reported by this participant for this item.] Item 4: [Location Identifying Database]
4RABNN	Item 3: NIST General Item 4: NIST General
66QMEN	Item 3: [No databases were reported by this participant for this item.] Item 4: STRidER_[Country]_2019-08-02
6EEGQL	Item 3: AB Global Filer Population Database Item 4: AB Global Filer Population Database
6RNWXQ	Item 3: DNAStatistiX PPF6C [Country] Item 4: DNAStatistiX PPF6C [Country], Hill, CR, et. (2013) Forensic Sci. Int. Genet. 7: e82-e83 (Supplemental Material Table 2), RMP: Allele frequencies were obtained from NIST 1036 Revised US Population Database (July 2017) located at https://strbase.nist.gov/NISTpop.htm.
7XAACJ	Item 3: [No databases were reported by this participant for this item.] Item 4: STRidER v2
8LAYM9	Item 3: [No databases were reported by this participant for this item.] Item 4: [Country Specific References]
9DEFL6	Item 3: [No databases were reported by this participant for this item.] Item 4: [Location Identifying References]
9J36YN	Item 3: [No databases were reported by this participant for this item.] Item 4: Hill, C.R., Duewer, D.L., Kline, M.C., Coble, M.D., Butler, J.M (2013) U.S. population data for 29 autosomal STR loci. Forensic Sci. Int. Genet. 7, e 82-83
AZGY3H	Item 3: no statistical analysis performed; victim and suspect both excluded from Item 3. Item 4: [No databases were reported by this participant for this item.]
BLHE2K	Item 3: Revised-NIST-1036-Allele Frequencies, ABI ID Database + Promega PP Fusion Item 4: Revised-NIST-1036-Allele Frequencies, ABI ID Database + Promega PP Fusion YHRD Release R68 valid as per 2022-10-29 11:39:19 UTC
BQFTU2	Item 3: [No databases were reported by this participant for this item.] Item 4: PopStats
DBAEM4	Item 3: [No databases were reported by this participant for this item.] Item 4: [Location Identifying Database]
EKWWF3	Item 3: [No databases were reported by this participant for this item.] Item 4: [Country Specific References]
EP8REK	Item 3: [No databases were reported by this participant for this item.] Item 4: STRidER [Country]

TABLE 7

WebCode	Databases Used
ETP62T	Item 3: STRmix Item 4: [No databases were reported by this participant for this item.]
FBLVU2	Item 3: [No databases were reported by this participant for this item.] Item 4: [Country Specific References]
GQTFPB	Item 3: NIST General Item 4: NIST General
H3F6XF	Item 3: [No databases were reported by this participant for this item.] Item 4: yhrd.org (mixture tool)
JFPX9T	Item 3: [Location Identifying Database] Item 4: [Location Identifying Database]
KT4P4C	Item 3: FBI_extended_Cauc Item 4: FBI_extended_Cauc
PPUVJN	Item 3: Item 1 - victim- was compared using FBI_extended_caucasian. Item 2 - suspect was compared using FBI_extended_african-american. Item 4: Item 1 - victim- was compared using FBI_extended_caucasian. Item 2 - suspect was compared using FBI_extended_african-american.
VEQULK	Item 3: [No databases were reported by this participant for this item.] Item 4: [Location Identifying Database]
W2KX3H	Item 3: No statistical calculation needed. Item 4: [Location Identifying Database]
X2DFBX	Item 3: [No databases were reported by this participant for this item.] Item 4: NIST
YCQWHU	Item 3: [No databases were reported by this participant for this item.] Item 4: Globalfiler Cauc

Amplification Kit Survey

Please list all PCR amplification kits (Autosomal and YSTR) utilized as well as any future kits yet to be implemented in your laboratory.

TABLE 8

WebCode	Amplification Kit
4LKNYB	(1) Applied Biosystems™ Globalfiler™ PCR Amplification Kit. (2) Applied Biosystems™ Globalfiler™ Express PCR Amplification Kit. (3) Applied Biosystems™ AmpFLSTR™ Yfiler™ PCR Amplification Kit. (4) Applied Biosystems™ AmpFLSTR™ Minifiler™ PCR Amplification Kit.
7DLT9P	Future Y-STR kit.
7VFLTN	Fusion 6C
BLHE2K	GlobalFiler, PowerPLex Fusion 5C and 6C, Investigator, Yfiler Plus and PowerPlex Y23 (Identifiler Plus and Yfiler are only used with respect the review of legacy data).
BQFTU2	Qiagen 24 plex QS. Qiagen 24 plex GO!
DBAEM4	1. Applied Biosystems Globalfiler PCR Amplification Kit. 2. Applied Biosystems Globalfiler Express PCR Amplification Kit. 3. Applied Biosystems AmpFlSTR Yfiler PCR Amplification Kit. 4. Applied Biosystems AmpFlSTR Minifiler PCR Amplification Kit.

Additional Comments

TABLE 9

WebCode	Additional Comments
4LKNYB	Statistical Evaluation: The statistical evaluations were performed on the DNA.View Statistical Software version 37.42. Results and Interpretation: 1) A mixed DNA profile of one major contributor and at least two minor contributors was developed from the Item 3. The DNA profiles obtained from the sources represented by Item 1 and Item 2 are not being the major contributor to this mixed DNA profile. I identified the source of this unknown major contributor as "Male 1". The minor contributors cannot be positively identified /conclusively distinguished. 2) A mixed DNA profile of at least two individuals was developed from the Item 4. The DNA profile represented by "Male 1" and the DNA profile obtained from the source represented by Item 2 is being the major and minor contributors respectively to this mixed DNA profile.
6RNWXQ	I am submitting results for the following kits: Globalfiler, PowerPlex Fusion 6C, and PowerPlex Y23.
7DLT9P	Due to laboraotry protocol Item 3 would be reported as a possible 2 person mixture not a possible 3 person mixture mixture due to not having 5 alleles at 2 or more loci. The analytical threshold in our laboratory is 150RFU thus the 18 allele at locus D18S51 and the 24 allele at locus D12S391 would not be called.
BLHE2K	Based on the information presented in the case scenario the presence of DNA from either blood or touch-type DNA could be probative. While the scenario mentions that the victim used his keys to stab one or two of an unspecified number of assailants, the probative value of potential blood stains is obvious. At the same time non-blood DNA transfer during the attack may also have occurred. Given that blood is a relatively DNA rich body fluid while touch type contact may deposit less DNA there is value in assessing first whether a person of interest is a potential major contributor to a mixture vs a potential minor contributor. I have reported both comparisons for this proficiency test. Unfortunately, the reporting format, however, only allows for the selection of one choice for each comparisons between the victim/suspect and an individual item of evidence. For future tests, you might want to consider adding functionality that would allow test takers to check a conclusion for a mixed DNA profile as a whole but also check another conclusion for the major or minor components of a mixture.
BQFTU2	** denotes there are possible alleles less than Stochastic Threshold, therefore the minor profile is inconclusive at this locus. + Denotes obligate alleles for CODIS entry. Item 3 - Three contributors. Two-person major and inconclusive third contributor.
DBAEM4	The statistical calculation was carried out using DNAView Statistical Software version 37.63.
EKWWF3	For next test please send the sttuter values.
H3F6XF	Fusion 6C, Globalfiler, ID Plus, Yfiler Plus, and PowerPlex Y23 HID and pdf formats analyzed. Only Globalfiler and Yfiler Plus reported within the charts due to differences between the STR and YSTR amplification kits. Analysis performed with GeneMarker HID v. 3.0.0. Additional alleles may or may not be detected within the analyzed HID files as compared to the pdf analysis due to GeneMarker vs GeneMapper ID-X program sensitivity.
JFPX9T	The Identifiler Plus electropherograms of items 3 and 4 were also considered for reference.
KT4P4C	HID files supplied contained a stutter filter that made the files unsuitable of input into a statistical evaluation software. The supplied HID files had to bb reinterpreted to add the stutter so the DNA profiles could be statistical evaluated. In the future, it would be appreciated if raw data files could be supplied.
PKXGQ8	[Moved from Item 3 and Item 4 Statistical Analysis Results: "Working from the pdf of the electropherogram, it is not possible to perform a thorough evaluation of each locus. As a result it is possible to miss very minor contributions from additional contributors and be incorrect in the possible number of contributors to complex mixture samples. It is also not possible to thoroughly evaluate spikes, pullup, and baseline irregularities which can affect correct allele determinations. I am a forensic consultant that reviews DNA case files submitted to me as evidence. I review the analyst allele calls and evidence to reference sample comparisons so I can understand how the original analyst arrived at their opinions and conclusions. I accept that their population calculations are correct. N/A: Not Applicable."]

TABLE 9

WebCode	Additional Comments
VEQULK	The statistical calculation was carried out using DNA View Software ver 37.56.
W2KX3H	Analysis of GlobalFiler raw data for Item 1, Item 2, Item 3 and Item 4 were done using GeneMapper ID-X 1.4.

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 22-5882: DNA Interpretation

DATA MUST BE SUBMITTED BY **Dec. 05, 2022, 11:59 p.m. EST** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A WebCode: HWFFPN

The Accreditation Release section can be accessed by using the "Continue to Final Submission" button above. This information can be entered at any time prior to submitting to CTS.

Scenario:
A male victim was assaulted by a group of individuals on the street. The victim fought off his attackers and managed to stab one or two individuals with his car key before losing consciousness on the sidewalk. A bicyclist found the unconscious victim and called 911. The male victim was brought to the hospital for treatment. A male suspect matching video footage of the attack was questioned and subsequently brought into custody. A shirt with reddish-brown stains was collected as evidence from the suspect's residence. The stains were swabbed and confirmed as blood by the Serology unit and subsequently submitted for DNA analysis (Item 3). The victim's car key also containing reddish-brown stains was swabbed and confirmed as blood and submitted for DNA analysis (Item 4).

HID and PDF file formats are provided for use in this test, choose any or all formats for evaluation.
The Identifiler™ Plus files that are included are utilizing the following amplification thresholds - Blue: 32 rfu, Green: 41 rfu, Yellow: 71 rfu, Red: 76 rfu, Internal Lane Standard (ILS): 500 rfu.

Items Submitted (Sample Pack INT2):
Item 1: DNA profile from reference sample (Male Victim - Caucasian)
Item 2: DNA profile from reference sample (Male Suspect - Black)
Item 3: DNA profile from the stain on the shirt
Item 4: DNA profile from the victim's car key

To verify a complete and accurate download, the hash value for the downloaded .ZIP file is as follows:
22-5882 Data for Participants.zip MD5 hash value: f6f5b2865d0f5ea6d10dbd008ef27ed2
22-5882 Data for Participants.zip SHA1 hash value: 3d3dd72d7e3e7a192f40f477ac379e54f5f55b8d

Part I: DNA ANALYSIS INSTRUCTIONS

- **Use your laboratory's Interpretation guidelines for evaluation of this test.**
- Please report Laboratory Specific Interpretation Guidelines below per amplification kit.
- If interpretation guidelines are not reported, the consensus information will be utilized in the review of results.

Analytical Threshold:	
Peak Height Ratio (%):	
Stochastic Threshold (Peak Amplitude):	

If you do not have Interpretation guidelines, please use the following guidelines and report these values above:
For STR Analysis: Analytical Threshold: 75 rfu, Peak Height Ratio: 60%, Stochastic Threshold (Peak Amplitude): 100 rfu

For YSTR Analysis: Analytical Threshold: 75 rfu, Peak Height Ratio: 50%, Stochastic Threshold (Peak Amplitude): 75 rfu

- Report the allelic results for each Item in the appropriate response boxes.
- If major and minor contributor(s) can be distinguished and your laboratory normally reports this distinction, report the results of the major profile and the minor profile in the appropriately labeled boxes; otherwise, list the alleles in numerical order in the remaining row of boxes labeled with the Item number.
- Please Note: Samples were completely consumed during extraction.

Part I: DNA ANALYSIS

STR & Amelogenin Results for Known Item 1

- Report alleles in numerical order, separated by a comma.
- Follow your laboratory procedures for reporting homozygotes (i.e. X,X or X) and null responses.

STR Amplification Kit Used For Item 1:

☐ GlobalFiler™ ☐ Investigator® 24plex

☐ Identifiler® Plus ☐ HID format

Please indicate the electropherogram(s) reviewed for this test.

☐ PowerPlex® Fusion 5C ☐ PowerPlex® Fusion 6C

☐ PDF format

Report the Probabilistic Genotyping Software Used (if applicable):

Alleles below are sorted in **Default** *order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
1						
ITEM	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
1						
ITEM	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
1						
ITEM	Penta D	Penta E	SE33	TH01	TPOX	vWA
1						
ITEM	DYS391	DYS570	DYS576	Y Indel		
1						

YSTR Results for Known Item 1

YSTR Amplification Kit Used For Item 1:

☐ YFiler® Plus ☐ PowerPlex® Y23

Please indicate the electropherogram(s) reviewed for this test.

☐ HID format ☐ PDF format

Alleles below are sorted in **Default** *order.*

ITEM	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
1									
ITEM	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
1									
ITEM	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	Y GATA H4
1									

Part I: DNA ANALYSIS (continued)

STR & Amelogenin Results for Known Item 2

- Report alleles in numerical order, separated by a comma.
- Follow your laboratory procedures for reporting homozygotes (i.e. X,X or X) and null responses.

STR Amplification Kit Used For Item 2:

☐ GlobalFiler™ ☐ Investigator® 24plex

☐ Identifiler® Plus ☐ HID format

Please indicate the electropherogram(s) reviewed for this test.

☐ PowerPlex® Fusion 5C ☐ PowerPlex® Fusion 6C

☐ PDF format

Report the Probabilistic Genotyping Software Used (if applicable):

Alleles below are sorted in **Default** *order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
2						
ITEM	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
2						
ITEM	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
2						
ITEM	Penta D	Penta E	SE33	TH01	TPOX	vWA
2						
ITEM	DYS391	DYS570	DYS576	Y Indel		
2						

YSTR Results for Known Item 2

YSTR Amplification Kit Used For Item 2:

☐ YFiler® Plus ☐ PowerPlex® Y23

Please indicate the electropherogram(s) reviewed for this test.

☐ HID format ☐ PDF format

Alleles below are sorted in **Default** *order.*

ITEM	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
2									
ITEM	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
2									
ITEM	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	Y GATA H4
2									

Part I: DNA ANALYSIS (continued)

STR & Amelogenin Results for Questioned Item 3

- Report alleles in numerical order, separated by a comma.
- Follow your laboratory procedures for reporting homozygotes (i.e. X,X or X) and null responses.
- For each locus, if a major and minor contributor can be distinguished and your laboratory normally reports this distinction, record the results in the appropriately labeled response boxes.

STR Amplification Kit Used For Item 3:

☐ GlobalFiler™ ☐ Investigator® 24plex ☐ Identifiler® Plus ☐ HID format

Please indicate the electropherogram(s) reviewed for this test.

☐ PowerPlex® Fusion 5C ☐ PowerPlex® Fusion 6C ☐ PDF format

Report the Probabilistic Genotyping Software Used (if applicable):

Alleles below are sorted in **Default** *order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
3						
3 major						
3 minor						
ITEM	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
3						
3 major						
3 minor						
ITEM	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
3						
3 major						
3 minor						
ITEM	Penta D	Penta E	SE33	TH01	TPOX	vWA
3						
3 major						
3 minor						
ITEM	DYS391	DYS570	DYS576	Y Indel		
3						
3 major						
3 minor						

YSTR Results for Questioned Item 3

YSTR Amplification Kit Used For Item 3:

☐ YFiler® Plus ☐ PowerPlex® Y23

Please indicate the electropherogram(s) reviewed for this test.

☐ HID format ☐ PDF format

Alleles below are sorted in **Default** *order.*

ITEM	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
3									
3 major									
3 minor									
ITEM	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
3									
3 major									
3 minor									
ITEM	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	Y GATA H4
3									
3 major									
3 minor									

Part I: DNA ANALYSIS (continued)

Item 3 DNA Analysis Questions

1) **Record the number of contributors found in the Item 3 DNA profile:**

2) **Choose the conclusion statement that best describes the results of the analysis for Item 3 based on comparisons with the Known Items** (If the wording below differs from the normal wording of your conclusions, adapt these conclusions as best you can and use your preferred wording in the Additional Comments section.):

Item 1 Conclusion

- Item 1 (victim) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 3.
- Item 1 (victim) is excluded as a possible contributor to the DNA obtained from Item 3.
- The DNA typing results for Item 3 in comparison with Item 1 are inconconclusive/uninterpretable.

Item 2 Conclusion

- Item 2 (suspect) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 3.
- Item 2 (suspect) is excluded as a possible contributor to the DNA obtained from Item 3.
- The DNA typing results for Item 3 in comparison with Item 2 are inconconclusive/uninterpretable.

3) **Statistical Analysis of Item 3 DNA Typing Results:**

Select the statistical method(s) used by marking the associated box and report these results in the space below:

- Combined Probability of Exclusion/Inclusions (CPE/CPI)
- Likelihood Ratio (LR)
- Random Match Probability (RMP)
- Other:

Please note: *Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*

4) **Please list any databases used in the statistical analyses of Item 3 below.**

Part I: DNA ANALYSIS (continued)

STR & Amelogenin Results for Questioned Item 4

- Report alleles in numerical order, separated by a comma.
- Follow your laboratory procedures for reporting homozygotes (i.e. X,X or X) and null responses.
- For each locus, if a major and minor contributor can be distinguished and your laboratory normally reports this distinction, record the results in the appropriately labeled response boxes.

STR Amplification Kit Used For Item 4:

☐ GlobalFiler™ ☐ Investigator® 24plex
☐ Identifiler® Plus ☐ HID format

Please indicate the electropherogram(s) reviewed for this test.

☐ PowerPlex® Fusion 5C ☐ PowerPlex® Fusion 6C
☐ PDF format

Report the Probabilistic Genotyping Software Used (if applicable):

Alleles below are sorted in **Default** *order.*

ITEM	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
4						
4 major						
4 minor						
ITEM	D8S1179	D10S1248	D12S391	D13S317	D16S539	D18S51
4						
4 major						
4 minor						
ITEM	D19S433	D21S11	D22S1045	Amelogenin	CSF1PO	FGA
4						
4 major						
4 minor						
ITEM	Penta D	Penta E	SE33	TH01	TPOX	vWA
4						
4 major						
4 minor						
ITEM	DYS391	DYS570	DYS576	Y Indel		
4						
4 major						
4 minor						

YSTR Results for Questioned Item 4

YSTR Amplification Kit Used For Item 4:

☐ YFiler® Plus ☐ PowerPlex® Y23

Please indicate the electropherogram(s) reviewed for this test.

☐ HID format ☐ PDF format

Alleles below are sorted in **Default** *order.*

ITEM	DYF387S1	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
4									
4 major									
4 minor									
ITEM	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
4									
4 major									
4 minor									
ITEM	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	Y GATA H4
4									
4 major									
4 minor									

Part I: DNA ANALYSIS (continued)

Item 4 DNA Analysis Questions

1) **Record the number of contributors found in the Item 4 DNA profile:**

2) **Choose the conclusion statement that best describes the results of the analysis for Item 4 based on comparisons with the Known Items** (If the wording below differs from the normal wording of your conclusions, adapt these conclusions as best you can and use your preferred wording in the Additional Comments section.):

Item 1 Conclusion

- Item 1 (victim) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 4.
- Item 1 (victim) is excluded as a possible contributor to the DNA obtained from Item 4.
- The DNA typing results for Item 4 in comparison with Item 1 are inconconclusive/uninterpretable.

Item 2 Conclusion

- Item 2 (suspect) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 4.
- Item 2 (suspect) is excluded as a possible contributor to the DNA obtained from Item 4.
- The DNA typing results for Item 4 in comparison with Item 2 are inconconclusive/uninterpretable.

3) **Statistical Analysis of Item 4 DNA Typing Results:**

Select the statistical method(s) used by marking the associated box and report these results in the space below:

- Combined Probability of Exclusion/Inclusions (CPE/CPI)
- Likelihood Ratio (LR)
- Random Match Probability (RMP)
- Other:

Please note: *Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*

4) **Please list any databases used in the statistical analyses of Item 4 below.**

Part II: ADDITIONAL COMMENTS

Comments regarding any part of this Test.

Please note: *Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*

Part III: AMPLIFICATION KIT SURVEY (optional)

To accommodate your laboratory's future needs, please list all PCR amplification kits (Autosomal and YSTR) utilized as well as any future kits to be implemented in your laboratory.

RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ASCLD/LAB, ANAB, and/or A2LA. Please select one of the following statements to ensure your data is handled appropriately.

- ○ This participant's data is intended for submission to ASCLD/LAB, ANAB, and/or A2LA. (Accreditation Release section below must be completed.)
- ○ This participant's data is **not** intended for submission to ASCLD/LAB, ANAB, and/or A2LA.

Have the laboratory's designated individual complete the following steps
only if your laboratory is accredited in this testing/calibration discipline
by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory

ANAB Certificate No.
(Include ASCLD/LAB Certificate here)

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety

Authorized Contact Person and Title

Laboratory Name

Location (City/State)