Collaborative Testing Services, Inc

FORENSIC TESTING PROGRAM

DNA Interpretation Test No. 22-5881
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 30 participants and are compiled into the following tables:

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 female donor. Item 2 was created using blood collected from a male donor. The Item 3 mixture was created by combining two parts of blood from the Item 1 female donor and one part of blood from a 3rd party male donor. The Item 4 mixture was created by combining five parts of blood from the Item 1 female donor, three parts of blood from the Item 2 male donor, and two 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 had reported the same allele.

Amelogenin and STR Results

Results compiled by predistribution laboratories and a consensus of participants.

Item	D1S1656 D8S1179 D19S433 Penta D DYS391	D2S1338 D10S1248 D21S11 Penta E DYS570	D2S441 D12S391 D22S1045 SE33 DYS576	D3S1358 D13S317 Amelogenin TH01 Y Indel	D5S818 D16S539 CSF1PO TPOX	D7S820 D18S51 FGA vWA
1	12,17	17,21	11,14	15,16	11,13	11,11
	10,15	13,17	15,17.3	10,13	9,13	14,16
	14,14	29,30	15,16	X,X	11,12	23,24
	*	*	21,21	8,9.3	11,11	15,17
	NM	NM	NM	NM		
2	16,18.3	17,18	10,14	17,17	11,11	10,11
	13,13	14,16	18,20	8,11	10,12	14,16
	13,14	29,30	11,17	X,Y	11,12	20,24
	*	*	16,17	7,9	8,10	17,18
	11	18	18	2		
3	12,16,17,18.3	16,17,21	11,14	15,16,18†	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13†	9,11,13	14,16,17
	13,14†	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	*	*	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	16	18	2		
4	12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
	10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
	13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
	*	*	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
	10,11	16,18	18	2		

NM - Non-Male profile, YSTR results not expected.

* 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.

YSTR Results

Results compiled from predistribution laboratories and a consensus of participants.

Item	DYF387S DYS437 DYS518	DYS19 DYS438 DYS533	DYS385 DYS439 DYS549	DYS389-I DYS448 DYS570	DYS389-II DYS449 DYS576	DYS390 DYS456 DYS627	DYS391 DYS458 DYS635	DYS392 DYS460 DYS643	DYS393 DYS481 YGATAH4
2	36,37	15	16	14	30	24	11	12	15
	15	10	12	20	28	14	16	11	25
	44	11	*	18	18	20	19	*	11
3	35,36	14	12,14	13	29	23	10	13	13
	15	12	11	20	28	17	17	10	22
	38	12	*	16	18	22	23	*	13†
4	35,36,37	14,15	12,14,16†	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12	*	16,18	18	20,22	19,23	*	11,13

* 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 (EPGs) 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 female victim's reference sample. Item 2 was the male suspect's reference sample. Item 3 was a mixture of samples from two individuals including the female victim and a 3rd party male contributor for whom no reference sample was provided (2:1 ratio respectively). Item 4 was a mixture of samples from three individuals including the female victim, the male suspect, and the same 3rd party male contributor used in Item 3 (5:3:2 ratio respectively).

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

STR Data
Of the 30 participants that reported results, 25 participants evaluated the provided STR data. The most frequently reported amplification kit utilized was GlobalFiler™. For reference Item 1, all participants reported data that were in line with the consensus. For reference Item 2, all but one participant reported results in line with the consensus. The remaining participant reported "11,0" and "2,0" at DYS391 and Y Indel whereas consensus was "11" and "2", respectively.

For questioned Item 3, four participants attempted the deconvolution of this mixture. However, due to the lack of reported data, no consensus was formed for major or minor profiles. A consensus was achieved for the full Item 3 profile (unseparated). All but three participants reported results in line with the consensus. One participant reported "29,30,32.2" at D21S11 whereas the consensus was "29,30,33.2". One participant reported "10,0" and "2,0" at DYS391 and Y Indel whereas consensus was "10" and "2", respectively. One participant reported "21,26.2" at SE33 whereas the consensus was "14,21,26.2"; however, this participant stated in their additional comments that they did not report alleles below their lab's stochastic threshold.

For questioned Item 4, two participants attempted the deconvolution of this mixture. However, due to the lack of reported data, no consensus was formed for major or minor profiles. A consensus was achieved for the full Item 4 profile (unseparated). All but five participants reported results in line with the consensus. Similar to Item 3, one participant did not report alleles that were below their lab's stochastic threshold, and therefore did not match consensus at 10 loci. One participant was missing allele(s) at 7 loci. Two participants reported an additional allele at SE33 and D12S391. One participant reported "2,0" at Y Indel whereas consensus was "2".

YSTR Data
Sixteen participants reported YSTR results.

For reference Item 2 and questioned Item 3, all participants reported data that were concordant with the consensus.

For questioned Item 4, all but one participant reported allelic responses that were concordant with the consensus. The remaining participant reported "10,11,12,13" at DYS439 whereas the consensus was "11,12".

Conclusions
For Item 3, 29 of 30 participants reported that two (or at least two) individuals contributed to the mixture. The remaining participant reported that three individuals contributed to the mixture. When comparing the Item 3 mixture profile with the Item 1 (victim) reference profile, all participants reported that the victim was included as a component of the mixture. When comparing the Item 3 mixture profile with the Item 2 (suspect) reference profile, 29 participants reported that the suspect was excluded as a component of the mixture and one participant reported an inconclusive result.

For Item 4, 29 of 30 participants reported that three (or at least three) individuals contributed to the mixture. The remaining participant reported two individuals contributed to the mixture. When comparing the Item 4 mixture profile with the Item 1 (victim) reference profile, 28 participants reported that the victim was included as a component of the mixture and two participants reported an inconclusive result. When comparing the Item 4 mixture profile with the Item 2 (suspect) reference profile, 29 participants reported that the suspect was included as a component of the mixture and one participant reported an inconclusive result.

Interpretation Guidelines

TABLE 1

WebCode	Analytical Threshold (rfu)	Peak Height Ratio (%)	Stochastic Threshold (rfu)
2WFYKY	125 blue, 150 green & yellow, 175 purple, 225 red& orange		
46G4NY	[Participant did not provide interpretation guidelines]		
6NDN3Y	75 rfu, 75 rfu		
86CKET	100 rfu	65%	600 rfu
8D7TWY	75, Y-STR-50	70%, Y-STR-60%	200, Y-STR-150
8DHP6P	[Participant did not provide interpretation guidelines]		
8ED97Q	75 rfu	60% (STR), 50% (YSTR)	100 rfu (STR), 75 rfu (YSTR)
9BCJ3N	[Participant did not provide interpretation guidelines]		
9JMLNP	[Participant did not provide interpretation guidelines]		
9YWPQV	[Participant did not provide interpretation guidelines]		
A24CZT	75	60	230
AEQJXU	80	60	250
ANQ9EV	[Participant did not provide interpretation guidelines]		
CLLZMQ	50 RFU	60%	865 RFU
D6TPDT	50	gamma distributed	
ELDZEL	[Participant did not provide interpretation guidelines]		
FUH8UL	225	50	225
HKPXXM	For STR Analysis: 75 rfu, For YSTR Analysis: 75 rfu	For STR Analysis: 60%, For YSTR Analysis: 50%	For STR Analysis: 200 rfu, For YSTR Analysis: 150 rfu
HTEJ4L	STR 60rfu; Y-STR 60rfu	STR 50%; Y-STR 50%	STR 100rfu; Y-STR 75rfu
J9R83A	75 RFU	60	230 RFU
K68LKK	150	60	300
NQUM6A	120	60	360
NXRCLD	200	65	800
RFFZHD	180	50	370
UBJRCA	[Participant did not provide interpretation guidelines]		
UYQCM9	F6C =B:46, G:70, Y:41, R:73, P:62; Y23= B:41, G:79, Y:118, R:121	60%	721 RFU
W7YK4Z	[Participant did not provide interpretation guidelines]		
XNCLB8	180	50	370
ZL2HD2	STR: 75rfu, YSTR: 75rfu	STR: 60%, YSTR: 50%	STR: 100rfu, YSTR: 75rfu
ZT22FW	120	60	360

STR & Amelogenin Results

TABLE 2

WebCode / Item	Amplification Kits (File Format)					
	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		

Item 1 - STR Results

2WFYKY — GlobalFiler™ (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,17	17,21	11,14	15,16	11,13	11,11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14,14	29,30	15,16	X,X	11,12	23,24
			21,21	8,9.3	11,11	15,17
	NR			NR		

46G4NY — GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,17	17,21	11,14	15,16	11,13	11,11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14,14	29,30	15,16	X,X	11,12	23,24
	12,13	17,19	21,21	8,9.3	11,11	15,17

6NDN3Y — GlobalFiler™ (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14	29,30	15,16	X	11,12	23,24
			21	8,9.3	11	15,17

86CKET — Investigator® 24plex

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14	29,30	15,16	X	11,12	23,24
			21	8,9.3	11	15,17
	-					

8D7TWY — PowerPlex® Fusion 5C (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14	29,30	15,16	X	11,12	23,24
	12,13	17,19	-	8,9.3	11	15,17
	-	-	-	-		

8ED97Q — GlobalFiler™ (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14	29,30	15,16	X,X	11,12	23,24
			21	8,9.3	11	15,17
	NM			NM		

TABLE 2

WebCode	Amplification Kits (File Format)					
	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

9YWPQV PowerPlex® Fusion 6C (PDF Format)

12,17	17,21	11,14	15,16	11,13	11
10,15	13,17	15,17.3	10,13	9,13	14,16
14	29,30	15,16	X	11,12	23,24
12,13	17,19	21	8,9.3	11	15,17

Item: 1

A24CZT PowerPlex® Fusion 6C

12,17	17,21	11,14	15,16	11,13	11
10,15	13,17	15,17.3	10,13	9,13	14,16
14	29,30	15,16	X	11,12	23,24
12,13	17,19	21	8,9.3	11	15,17

Item: 1

AEQJXU GlobalFiler™ (PDF Format)

12,17	17,21	11,14	15,16	11,13	11,11
10,15	13,17	15,17.3	10,13	9,13	14,16
14,14	29,30	15,16	X,X	11,12	23,24
		21,21	8,9.3	11,11	15,17

Item: 1

ANQ9EV GlobalFiler™ (HID Format)

12,17	17,21	11,14	15,16	11,13	11
10,15	13,17	15,17.3	10,13	9,13	14,16
14	29,30	15,16	X	11,12	23,24
		21	8,9.3	11	15,17
-			-		

Item: 1

CLLZMQ GlobalFiler™ (PDF Format)

12,17	17,21	11,14	15,16	11,13	11,11
10,15	13,17	15,17.3	10,13	9,13	14,16
14,14	29,30	15,16	X,X	11,12	23,24
		21,21	8,9.3	11,11	15,17
NEG.			NEG.		

Item: 1

D6TPDT GlobalFiler™ (HID Format)

12,17	17,21	11,14	15,16	11,13	11
10,15	13,17	15,17.3	10,13	9,13	14,16
14	29,30	15,16	X	11,12	23,24
		21	8,9.3	11	15,17

Item: 1

FUH8UL GlobalFiler™

12,17	17,21	11,14	15,16	11,13	11,11
10,15	13,17	15,17.3	10,13	9,13	14,16
14,14	29,30	15,16	X,X	11,12	23,24
		21,21	8,9.3	11,11	15,17
0			0		

Item: 1

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

HKPXXM GlobalFiler™ (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,17	17,21	11,14	15,16	11,13	11,11
10,15	13,17	15,17.3	10,13	9,13	14,16
14,14	29,30	15,16	X,X	11,12	23,24
		21,21	8,9.3	11,11	15,17

Item: 1

HTEJ4L GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,17	17,21	11,14	15,16	11,13	11,11
10,15	13,17	15,17.3	10,13	9,13	14,16
14,14	29,30	15,16	X,X	11,12	23,24
		21,21	8,9.3	11,11	15,17

Item: 1

J9R83A PowerPlex® Fusion 6C (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,17	17,21	11,14	15,16	11,13	11
10,15	13,17	15,17.3	10,13	9,13	14,16
14	29,30	15,16	X	11,12	23,24
12,13	17,19	21	8,9.3	11	15,17

Item: 1

K68LKK Identifiler™ Plus (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	17,21		15,16	11,13	11
10,15			10,13	9,13	14,16
14	29,30		X,X	11,12	23,24
			8,9.3	11	15,17

Item: 1

NQUM6A GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,17	17,21	11,14	15,16	11,13	11
10,15	13,17	15,17.3	10,13	9,13	14,16
14	29,30	15,16	X,X	11,12	23,24
		21	8,9.3	11	15,17
NM			NM		

Item: 1

NXRCLD GlobalFiler™ (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,17	17,21	11,14	15,16	11,13	11,11
10,15	13,17	15,17.3	10,13	9,13	14,16
14,14	29,30	15,16	X,X	11,12	23,24
-	-	21,21	8,9.3	11,11	15,17
-	-	-	-		

Item: 1

RFFZHD Investigator® 24plex

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,17	17,21	11,14	15,16	11,13	11,11
10,15	13,17	15,17.3	10,13	9,13	14,16
14,14	29,30	15,16	X,X	11,12	23,24
N/A	N/A	21,21	8,9.3	11,11	15,17
N/A	N/A	N/A	N/A		

Item: 1

TABLE 2

WebCode	Amplification Kits (File Format)					
	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

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

	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14	29,30	15,16	X	11,12	23,24
	12,13	17,19	21	8,9.3	11	15,17

UYQCM9 PowerPlex® Fusion 6C (HID Format)

	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14	29,30	15,16	X,X	11,12	23,24
	12,13	17,19	21	8,9.3	11	15,17

XNCLB8 Investigator® 24plex

	12,17	17,21	11,14	15,16	11,13	11,11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14,14	29,30	15,16	X,X	11,12	23,24
	N/A	N/A	21,21	8,9.3	11,11	15,17
	N/A	N/A	N/A	N/A		

ZL2HD2 GlobalFiler™ (PDF Format)

	12,17	17,21	11,14	15,16	11,13	11,11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14,14	29,30	15,16	X,X	11,12	23,24
	N/A	N/A	21,21	8,9.3	11,11	15,17
	NSD	N/A	N/A	NSD		

ZT22FW GlobalFiler™ (PDF Format)

	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13	9,13	14,16
1	14	29,30	15,16	X,X	11,12	23,24
			21	8,9.3	11	15,17
	NM			NM		

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

2WFYKY　GlobalFiler™ (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,18.3	17,18	10,14	17,17	11,11	10,11
13,13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
		16,17	7,9	8,10	17,18
11			2		

Item: 2

46G4NY　GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,18.3	17,18	10,14	17,17	11,11	10,11
13,13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
9,13	12,17	16,17	7,9	8,10	17,18
11	18	18	2		

Item: 2

6NDN3Y　GlobalFiler™ (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,18.3	17,18	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
		16,17	7,9	8,10	17,18
11			2		

Item: 2

86CKET　Investigator® 24plex

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,18.3	17,18	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
		16,17	7,9	8,10	17,18
11					

Item: 2

8D7TWY　PowerPlex® Fusion 5C (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,18.3	17,18	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
9,13	12,17	-	7,9	8,10	17,18
11	-	-	-		

Item: 2

8ED97Q　GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,18.3	17,18	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
		16,17	7,9	8,10	17,18
11			2		

Item: 2

9YWPQV　PowerPlex® Fusion 6C (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
16,18.3	17,18	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
9,13	12,17	16,17	7,9	8,10	17,18
11	18	18			

Item: 2

TABLE 2

WebCode	Amplification Kits (File Format)					
	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

A24CZT	PowerPlex® Fusion 6C					
	16,18.3	17,18	10,14	17	11	10,11
	13	14,16	18,20	8,11	10,12	14,16
2	13,14	29,30	11,17	X,Y	11,12	20,24
	9,13	12,17	16,17	7,9	8,10	17,18
	11	18	18			
AEQJXU	GlobalFiler™ (PDF Format)					
	16,18.3	17,18	10,14	17,17	11,11	10,11
	13,13	14,16	18,20	8,11	10,12	14,16
2	13,14	29,30	11,17	X,Y	11,12	20,24
			16,17	7,9	8,10	17,18
	11			2		
ANQ9EV	GlobalFiler™ (HID Format)					
	16,18.3	17,18	10,14	17	11	10,11
	13	14,16	18,20	8,11	10,12	14,16
2	13,14	29,30	11,17	X,Y	11,12	20,24
			16,17	7,9	8,10	17,18
	11			2		
CLLZMQ	GlobalFiler™ (PDF Format)					
	16,18.3	17,18	10,14	17,17	11,11	10,11
	13,13	14,16	18,20	8,11	10,12	14,16
2	13,14	29,30	11,17	X,Y	11,12	20,24
			16,17	7,9	8,10	17,18
	11			2		
D6TPDT	GlobalFiler™ (HID Format)					
	16,18.3	17,18	10,14	17	11	10,11
	13	14,16	18,20	8,11	10,12	14,16
2	13,14	29,30	11,17	X,Y	11,12	20,24
			16,17	7,9	8,10	17,18
	11			2		
FUH8UL	GlobalFiler™					
	16,18.3	17,18	10,14	17,17	11,11	10,11
	13,13	14,16	18,20	8,11	10,12	14,16
2	13,14	29,30	11,17	X,Y	11,12	20,24
			16,17	7,9	8,10	17,18
	11,0			2,0		
HKPXXM	GlobalFiler™ (PDF Format), (HID Format)					
	16,18.3	17,18	10,14	17,17	11,11	10,11
	13,13	14,16	18,20	8,11	10,12	14,16
2	13,14	29,30	11,17	X,Y	11,12	20,24
			16,17	7,9	8,10	17,18
	11			2		

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

HTEJ4L   GlobalFiler™ (PDF Format)

	D1S1656/D8S1179/D19S433/Penta D/DYS391	D2S1338/D10S1248/D21S11/Penta E/DYS570	D2S441/D12S391/D22S1045/SE33/DYS576	D3S1358/D13S317/Amelogenin/TH01/Y Indel	D5S818/D16S539/CSF1PO/TPOX	D7S820/D18S51/FGA/vWA
2	16,18.3	17,18	10,14	17,17	11,11	10,11
	13,13	14,16	18,20	8,11	10,12	14,16
	13,14	29,30	11,17	X,Y	11,12	20,24
			16,17	7,9	8,10	17,18
	11			2		

J9R83A   PowerPlex® Fusion 6C (PDF Format), (HID Format)

2	16,18.3	17,18	10,14	17	11	10,11
	13	14,16	18,20	8,11	10,12	14,16
	13,14	29,30	11,17	X,Y	11,12	20,24
	9,13	12,17	16,17	7,9	8,10	17,18
	11	18	18			

K68LKK   Identifiler™ Plus (HID Format)

2		17,18		17	11	10,11
	13			8,11	10,12	14,16
	13,14	29,30		X,Y	11,12	20,24
				7,9	8,10	17,18

NQUM6A   GlobalFiler™ (PDF Format)

2	16,18.3	17,18	10,14	17	11	10,11
	13	14,16	18,20	8,11	10,12	14,16
	13,14	29,30	11,17	X,Y	11,12	20,24
			16,17	7,9	8,10	17,18
	11			2		

NXRCLD   GlobalFiler™ (HID Format)

2	16,18.3	17,18	10,14	17,17	11,11	10,11
	13,13	14,16	18,20	8,11	10,12	14,16
	13,14	29,30	11,17	X,Y	11,12	20,24
	-	-	16,17	7,9	8,10	17,18
	11	-	-	2		

RFFZHD   Investigator® 24plex

2	16,18.3	17,18	10,14	17,17	11,11	10,11
	13,13	14,16	18,20	8,11	10,12	14,16
	13,14	29,30	11,17	X,Y	11,12	20,24
	N/A	N/A	16,17	7,9	8,10	17,18
	11	N/A	N/A	N/A		

TABLE 2

WebCode	Amplification Kits (File Format)					
	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

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

16,18.3	17,18	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
9,13	12,17	16,17	7,9	8,10	17,18
11	18	18	2		

(Item: 2)

UYQCM9   PowerPlex® Fusion 6C (HID Format)

16,18.3	17,18	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
9,13	12,17	16,17	7,9	8,10	17,18
11	18	18			

(Item: 2)

XNCLB8   Investigator® 24plex

16,18.3	17,18	10,14	17,17	11,11	10,11
13,13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
N/A	N/A	16,17	7,9	8,10	17,18
11	N/A	N/A	N/A		

(Item: 2)

ZL2HD2   GlobalFiler™ (PDF Format)

16,18.3	17,18	10,14	17,17	11,11	10,11
13,13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
N/A	N/A	16,17	7,9	8,10	17,18
11	N/A	N/A	2		

(Item: 2)

ZT22FW   GlobalFiler™ (PDF Format)

16,18.3	17,18	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
		16,17	7,9	8,10	17,18
11			2		

(Item: 2)

TABLE 2

WebCode	Amplification Kits (File Format)					
	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

2WFYKY	GlobalFiler™ (HID Format)					
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

46G4NY	GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format)					
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	11,12,13	10,12,17,19	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	16	18	2		

6NDN3Y	GlobalFiler™ (HID Format)					
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

86CKET	Investigator® 24plex					
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			21,26.2*	6,8,9.3,10	9,11,12	14,15,17,20
	10					
	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13	9,13	14,16
3major	14	29,30	15,16	X	11,12	23,24
			Inc	8,9.3	11	15,17
	16,18.3	16,21	11,14	16,18	11,13	10
	14+	13,14	15,18	10,12	11+	16,17
3minor	13+	30,33.2	11	X,Y	11	22,23
			Inc	6,10	9,12	14,20
	10					

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

8D7TWY PowerPlex® Fusion 5C (HID Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
3	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	11,12,13	10,12,17,19	-	6,8,9.3,10	9,11,12	14,15,17,20
	10	-	-	-		
3major	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13	9,13	14,16
	14	29,30	15,16	X	11,12	23,24
	12,13	17,19	-	8,9.3	11	15,17
	-	-	-	-		
3minor	16,18.3	16,21	11,14	18	11,13	10,11
	10,14	13,14	17.3,18	12,13	11	16,17
	13	33.2	16	X,Y	11,12	22
	11,12	10,12	-	6,10	9,12	14,20
	10	-	-	-		

8ED97Q GlobalFiler™ (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
3	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

9YWPQV PowerPlex® Fusion 6C (PDF Format)

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
3	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	11,12,13	10,12,17,19	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	16	18			

A24CZT PowerPlex® Fusion 6C

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
3	12,16,17,18.3	16,17,21	11,14	15,16,17,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,11,12,13	9,11,13	14,16,17
	10.2,13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	11,12,13	10,12,17,19	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	16	18			
3major	15,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
	13,14	29,30,33.2	11,15,16		11,12	22,23,24
	11,12,13	10,12,17,19	14,21,26,2	6,8,9.3,10	9,11,12	14,15,17,20

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

AEQJXU	GlobalFiler™ (PDF Format)					
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

ANQ9EV	GlobalFiler™ (HID Format)					
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		
	12,17	17,21	11,14	15,16	11,13	11
	10,15	13,17	15,17.3	10,13		14,16
3major	14	29,30		X		23,24
			21	8,9.3	11	15,17
	16,18.3	16,21	11,14	16,18	11,13	10,11
	10,14	13,14	15,18	10,12		16,17
3minor	13,14	30,33.2		X,Y		22,24
			14,26.2	6,10	9,12	14,20
				2		

CLLZMQ	GlobalFiler™ (PDF Format)					
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

D6TPDT	GlobalFiler™ (HID Format)					
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

FUH8UL	GlobalFiler™ (PDF Format)					
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10,0			2,0		

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

HKPXXM	GlobalFiler™ (PDF Format), (HID Format)				
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

HTEJ4L	GlobalFiler™ (PDF Format)				
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

J9R83A	PowerPlex® Fusion 6C (PDF Format), (HID Format)				
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	10.2,13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	11,12,13	10,12,17,19	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	16	18			

K68LKK	Identifiler™ Plus (HID Format)				
		16,17,21		15,16,18	11,13	10,11
	10,14,15			10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2		X,Y	11,12	22,23,24
				6,8,9.3,10	9,11,12	14,15,17,20

NQUM6A	GlobalFiler™ (PDF Format)				
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

NXRCLD	GlobalFiler™ (HID Format)				
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	-	-	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	-	-	2		

RFFZHD	Investigator® 24plex				
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	N/A	N/A	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	N/A	N/A	N/A		

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

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

	D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	11,12,13	10,12,17,19	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	16	18	2		

UYQCM9   PowerPlex® Fusion 6C (HID Format)

	12,16,17,18.3	16,17,21	11,14	15,16,17,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,11,12,13	9,11,13	14,16,17
3	10.2,13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	11,12,13	10,12,17,19	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	16	18			

XNCLB8   Investigator® 24plex

	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,32.2	11,15,16	X,Y	11,12	22,23,24
	N/A	N/A	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	N/A	N/A	N/A		

ZL2HD2   GlobalFiler™ (PDF Format)

	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
	N/A	N/A	14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10	N/A	N/A	2		

ZT22FW   GlobalFiler™ (PDF Format)

	12,16,17,18.3	16,17,21	11,14	15,16,18	11,13	10,11
	10,14,15	13,14,17	15,17.3,18	10,12,13	9,11,13	14,16,17
3	13,14	29,30,33.2	11,15,16	X,Y	11,12	22,23,24
			14,21,26.2	6,8,9.3,10	9,11,12	14,15,17,20
	10			2		

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

2WFYKY   GlobalFiler™ (HID Format)

D1S1656 / ...	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

Item 4

46G4NY   GlobalFiler™, Investigator® 24plex, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, Identifiler™ Plus (PDF Format)

12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
9,11,12,13	10,12,17,19	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11	16,18	18	2		

Item 4

6NDN3Y   GlobalFiler™ (HID Format)

12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

Item 4

86CKET   Investigator® 24plex

12,16,17,18.3	17,21*	10,11,14	15,16,17*	11,13	10,11
10,13,15*	13,14,16,17	15,17.3,18,20	8,10,11,13*	9,10,11,12,13	14,16*
13,14	29,30*	11,15,16,17	X,Y	11,12	20,23,24*
		16,17,21*	6,7,8,9,9.3,10	8,9,10,11*	15,17,18*
10,11					

4major

16+	_	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11+	20,24
		16,17	7,9	8,10	17,18
11					

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

8D7TWY PowerPlex® Fusion 5C (HID Format)

12,16,17,18.3	16,17,18,21	10,11,14	15,16,17	11,13	10,11
10,13,15	13,14,16,17	15,17.3,18,20	8,10,11,13	9,10,12,13	14,16
13,14	29,30	11,15,16,17	X,Y	11,12	20,23,24
9,11,12,13	12,17,19	-	7,8,9,9.3	8,10,11	15,17,18
10,11	-	-	-		

Item: 4

4major

16,18.3	17,18	10,14	17	11	10,11
13	14,16	18,20	8,11	10,12	14,16
13,14	29,30	11,17	X,Y	11,12	20,24
9,13	12,17	-	7,9	8,10	17,18
11	-	-	-		

4minor

12,17	16,21	11	15,16	13	10,11
10,15	13,17	15,17.3	10,13	9,13	14,16
13,14	29,30	15,16	X,Y	11,12	23
11,12	19	-	8,9.3	11	15
10	-	-	-		

8ED97Q GlobalFiler™ (PDF Format)

12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

Item: 4

9YWPQV PowerPlex® Fusion 6C (PDF Format)

12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
9,11,12,13	10,12,17,19	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11	16,18	18			

Item: 4

A24CZT PowerPlex® Fusion 6C

12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
9,11,12,13	10,12,17,19	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11	16,18	18			

Item: 4

AEQJXU GlobalFiler™ (PDF Format)

12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

Item: 4

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

ANQ9EV   GlobalFiler™ (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

Item: 4

CLLZMQ   GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

Item: 4

D6TPDT   GlobalFiler™ (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

Item: 4

FUH8UL   GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2,0		

Item: 4

HKPXXM   GlobalFiler™ (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,22,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

Item: 4

HTEJ4L   GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

Item: 4

J9R83A   PowerPlex® Fusion 6C (PDF Format), (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
9,11,12,13	10,12,17,19	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11	16,18	18			

Item: 4

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

K68LKK   Identifiler™ Plus (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	16,17,18,21		15,16,17,18	11,13	10,11
10,13,14,15			8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2		X,Y	11,12	20,22,23,24
			6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20

(Item 4)

NQUM6A   GlobalFiler™ (PDF Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
		14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11			2		

(Item 4)

NXRCLD   GlobalFiler™ (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
-	-	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11	-	-	2		

(Item 4)

RFFZHD   Investigator® 24plex

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
N/A	N/A	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11	N/A	N/A	N/A		

(Item 4)

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

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
9,11,12,13	10,12,17,19	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11	16,18	18	2		

(Item 4)

UYQCM9   PowerPlex® Fusion 6C (HID Format)

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
10,13,14,15	13,14,16,17	15,17.3,18,18.3,20	8,10,11,12,13	9,10,11,12,13	14,16,17
13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
9,11,12,13	10,12,17,19	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
10,11	16,18	18			

(Item 4)

TABLE 2

WebCode	Amplification Kits (File Format)				
	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

XNCLB8	Investigator® 24plex					
	12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
	10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
4	13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
	N/A	N/A	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
	10,11	N/A	N/A	N/A		
ZL2HD2	GlobalFiler™ (PDF Format)					
	12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
	10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
4	13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
	N/A	N/A	14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
	10,11	N/A	N/A	2		
ZT22FW	GlobalFiler™ (PDF Format)					
	12,16,17,18.3	16,17,18,21	10,11,14	15,16,17,18	11,13	10,11
	10,13,14,15	13,14,16,17	15,17.3,18,20	8,10,11,12,13	9,10,11,12,13	14,16,17
4	13,14	29,30,33.2	11,15,16,17	X,Y	11,12	20,22,23,24
			14,16,17,21,26.2	6,7,8,9,9.3,10	8,9,10,11,12	14,15,17,18,20
	10,11			2		

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 2 - YSTR Results

WebCode / Item									
46G4NY	Yfiler™ Plus, PowerPlex® Y23								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11	11	18	18	20	19	11	11
6NDN3Y	Yfiler™ Plus (HID Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11
8D7TWY	PowerPlex® Y23 (HID Format)								
	-	15	16	14	30	24	11	12	15
2	15	10	12	20	-	14	16	-	25
	-	11	11	18	18	-	19	11	11
8ED97Q	Yfiler™ Plus (PDF Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11
9YWPQV	PowerPlex® Y23 (PDF Format)								
		15	16	14	30	24	11	12	15
2	15	10	12	20		14	16		25
		11	11	18	18		19	11	11
AEQJXU	Yfiler™ Plus (PDF Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11
ANQ9EV	Yfiler™ Plus (HID Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11
CLLZMQ	Yfiler™ Plus (PDF Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11
HKPXXM	Yfiler™ Plus (PDF Format), (HID Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11
HTEJ4L	PowerPlex® Y23 (PDF Format)								
		15	16,16	14	30	24	11	12	15
2	15	10	12	20		14	16		25
		11	11	18	18		19	11	11

TABLE 3

WebCode	Amplification Kits (File Format)								
	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
Item	DYS437	DYS438	DYS439	DYS448	DYS449	DYS456	DYS458	DYS460	DYS481
	DYS518	DYS533	DYS549	DYS570	DYS576	DYS627	DYS635	DYS643	YGATAH4

Item 2 - YSTR Results

K68LKK	Yfiler™ Plus (PDF Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11
NQUM6A	Yfiler™ Plus (PDF Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11
UBJRCA	Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11	11	18	18	20	19	11	11
UYQCM9	PowerPlex® Y23 (HID Format)								
		15	16	14	30	24	11	12	15
2	15	10	12	20		14	16		25
		11	11	18	18		19	11	11
ZL2HD2	Yfiler™ Plus (PDF Format)								
	36,37	15	16,16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11	N/A	18	18	20	19	N/A	11
ZT22FW	Yfiler™ Plus (PDF Format)								
	36,37	15	16	14	30	24	11	12	15
2	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S / DYS437 / DYS518	DYS19 / DYS438 / DYS533	DYS385 / DYS439 / DYS549	DYS389-I / DYS448 / DYS570	DYS389-II / DYS449 / DYS576	DYS390 / DYS456 / DYS627	DYS391 / DYS458 / DYS635	DYS392 / DYS460 / DYS643	DYS393 / DYS481 / YGATAH4

Item 3 - YSTR Results

46G4NY — Yfiler™ Plus, PowerPlex® Y23 (PDF Format)

Item	DYF387S / DYS437 / DYS518	DYS19 / DYS438 / DYS533	DYS385 / DYS439 / DYS549	DYS389-I / DYS448 / DYS570	DYS389-II / DYS449 / DYS576	DYS390 / DYS456 / DYS627	DYS391 / DYS458 / DYS635	DYS392 / DYS460 / DYS643	DYS393 / DYS481 / YGATAH4
	35,36	14	12,14	13	29	23	10	13	13
3	15	12	11	20	28	17	17	10	22
	38	12	14	16	18	22	23	10	13

6NDN3Y — Yfiler™ Plus (HID Format)

Item									
	35,36	14	12,14	13	29	23	10	13	13
3	15	12	11	20	28	17	17	10	22
	38	12		16	18	22	23		13

8D7TWY — PowerPlex® Y23 (HID Format)

Item									
	-	14	12,14	13	29	23	10	13	13
3	15	12	11	20	-	17	17	-	22
	-	12	14	16	18	-	23	10	12,13
	-	14	12,14	13	29	23	10	13	13
3major	15	12	11	20	-	17	17	-	22
	-	12	14	16	18	-	23	10	12,13

8ED97Q — Yfiler™ Plus (PDF Format)

Item									
	35,36	14	12,14	13	29	23	10	13	13
3	15	12	11	20	28	17	17	10	22
	38	12		16	18	22	23		13

9YWPQV — PowerPlex® Y23 (PDF Format)

Item									
		14	12,14	13	29	23	10	13	13
3	15	12	11	20		17	17		22
		12	14	16	18		23	10	12,13

AEQJXU — Yfiler™ Plus (PDF Format)

Item									
	35,36	14	12,14	13	29	23	10	13	13
3	15	12	11	20	28	17	17	10	22
	38	12		16	18	22	23		13

ANQ9EV — Yfiler™ Plus (HID Format)

Item									
	35,36	14	12,14	13	29	23	10	13	13
3	15	12	11	20	28	17	17	10	22
	38	12		16	18	22	23		13

CLLZMQ — Yfiler™ Plus (PDF Format)

Item									
	35,36	14	12,14	13	29	23	10	13	13
3	15	12	11	20	28	17	17	10	22
	38	12		16	18	22	23		13

HKPXXM — Yfiler™ Plus (PDF Format), (HID Format)

Item									
	35,36	14	12,14	13	29	23	10	13	13
3	15	12	11	20	28	17	17	10	22
	38	12		16	18	22	23		13

TABLE 3

WebCode / Item	Amplification Kits (File Format)								
	DYF387S / DYS437 / DYS518	DYS19 / DYS438 / DYS533	DYS385 / DYS439 / DYS549	DYS389-I / DYS448 / DYS570	DYS389-II / DYS449 / DYS576	DYS390 / DYS456 / DYS627	DYS391 / DYS458 / DYS635	DYS392 / DYS460 / DYS643	DYS393 / DYS481 / YGATAH4

Item 3 - YSTR Results

HTEJ4L — PowerPlex® Y23 (PDF Format) — Item 3

Column	DYF387S/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/YGATAH4
Row 1		14	12,14	13	29	23	10	13	13
Row 2	15	12	11	20		17	17		22
Row 3		12	14	16	18		23	10	12,13

K68LKK — Yfiler™ Plus (PDF Format) — Item 3

Column	DYF387S/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/YGATAH4
Row 1	35,36	14	12,14	13	29	23	10	13	13
Row 2	15	12	11	20	28	17	17	10	22
Row 3	38	12		16	18	22	23		13

NQUM6A — Yfiler™ Plus (PDF Format) — Item 3

Column	DYF387S/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/YGATAH4
Row 1	35,36	14	12,14	13	29	23	10	13	13
Row 2	15	12	11	20	28	17	17	10	22
Row 3	38	12		16	18	22	23		13

UBJRCA — Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format) — Item 3

Column	DYF387S/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/YGATAH4
Row 1	35,36	14	12,14	13	29	23	10	13	13
Row 2	15	12	11	20	28	17	17	10	22
Row 3	38	12	14	16	18	22	23	10	13

UYQCM9 — PowerPlex® Y23 (HID Format) — Item 3

Column	DYF387S/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/YGATAH4
Row 1		14	12,14	13	29	23	10	13	13
Row 2	15	12	11	20		17	17		22
Row 3		12	14	16	18		23	10	12,13

ZL2HD2 — Yfiler™ Plus (PDF Format) — Item 3

Column	DYF387S/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/YGATAH4
Row 1	35,36	14	12,14	13	29	23	10	13	13
Row 2	15	12	11	20	28	17	17	10	22
Row 3	38	12	N/A	16	18	22	23	N/A	13

ZT22FW — Yfiler™ Plus (PDF Format) — Item 3

Column	DYF387S/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/YGATAH4
Row 1	35,36	14	12,14	13	29	23	10	13	13
Row 2	15	12	11	20	28	17	17	10	22
Row 3	38	12		16	18	22	23		13

TABLE 3

WebCode / Item	DYF387S / DYS437 / DYS518	DYS19 / DYS438 / DYS533	DYS385 / DYS439 / DYS549	DYS389-I / DYS448 / DYS570	DYS389-II / DYS449 / DYS576	DYS390 / DYS456 / DYS627	DYS391 / DYS458 / DYS635	DYS392 / DYS460 / DYS643	DYS393 / DYS481 / YGATAH4

Item 4 - YSTR Results

46G4NY — Yfiler™ Plus, PowerPlex® Y23 (PDF Format)

Item	DYF387S/DYS437/DYS518	DYS19/DYS438/DYS533	DYS385/DYS439/DYS549	DYS389-I/DYS448/DYS570	DYS389-II/DYS449/DYS576	DYS390/DYS456/DYS627	DYS391/DYS458/DYS635	DYS392/DYS460/DYS643	DYS393/DYS481/YGATAH4
4	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12	11,14	16,18	18	20,22	19,23	10,11	11,13

6NDN3Y — Yfiler™ Plus

Item									
4	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12		16,18	18	20,22	19,23		11,13

8D7TWY — PowerPlex® Y23 (HID Format)

Item									
4	-	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	-	14,17	16,17	-	22,25
	-	11,12	11,14	16,18	18	-	19,23	10,11	11,13
4major	-	15	16	14	30	24	11	12	15
	15	10	12	20	-	14	16	-	25
	-	11	11	18	18	-	19	11	11
4minor	-	14	12,14	13	29	23	10	13	13
	15	12	11	20	-	17	17	-	22
	-	12	14	16	18	-	23	10	13

8ED97Q — Yfiler™ Plus (PDF Format)

Item									
4	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12		16,18	18	20,22	19,23		11,13

9YWPQV — PowerPlex® Y23 (PDF Format)

Item									
4		14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20		14,17	16,17		22,25
		11,12	11,14	16,18	18		19,23	10,11	11,13

AEQJXU — Yfiler™ Plus (PDF Format)

Item									
4	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12		16,18	18	20,22	19,23		11,13

ANQ9EV — Yfiler™ Plus (HID Format)

Item									
4	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12		16,18	18	20,22	19,23		11,13
4major	36,37	15	16	14	30	24	11	12	15
	15	10	12	20	28	14	16	11	25
	44	11		18	18	20	19		11
4minor	35,36	14	12,14	13	29	23	10	13	13
	15	12	11	20	28	17	17	10	22
	38	12		16	18	22	23		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 4 - YSTR Results

CLLZMQ — Yfiler™ Plus (PDF Format), Item 4

	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12		16,18	18	20,22	19,23		11,13

HKPXXM — Yfiler™ Plus (PDF Format), (HID Format), Item 4

	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12		16,18	18	20,22	19,23		11,13

HTEJ4L — PowerPlex® Y23 (PDF Format), Item 4

	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		14,15	12,13,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20		14,17	16,17		22,25
		11,12	11,14	16,18	18		19,23	10,11	11,13

K68LKK — Yfiler™ Plus (PDF Format), Item 4

	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12		16,18	18	20,22	19,23		11,13

NQUM6A — Yfiler™ Plus (PDF Format), Item 4

	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12		16,18	18	20,22	19,23		11,13

UBJRCA — Yfiler™ Plus, PowerPlex® Y23 (PDF Format), (HID Format), Item 4

	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12	11,14	16,18	18	20,22	19,23	10,11	11,13

UYQCM9 — PowerPlex® Y23 (HID Format), Item 4

	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
		14,15	12,13,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	10,11,12,13	20		14,17	16,17		22,25
		11,12	11,14	16,18	18		19,23	10,11	11,13

ZL2HD2 — Yfiler™ Plus (PDF Format), Item 4

	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12	N/A	16,18	18	20,22	19,23	N/A	11,13

ZT22FW — Yfiler™ Plus (PDF Format), Item 4

	DYF387S	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	35,36,37	14,15	12,14,16	13,14	29,30	23,24	10,11	12,13	13,15
	15	10,12	11,12	20	28	14,17	16,17	10,11	22,25
	38,44	11,12		16,18	18	20,22	19,23		11,13

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

WebCode	Item 3 Conclusion			Item 4 Conclusion		
	# of Contributors	Item 1	Item 2	# of Contributors	Item 1	Item 2
2WFYKY	2	Included	Excluded	3	Included	Included
46G4NY	2	Included	Excluded	3	Included	Included
6NDN3Y	2	Included	Excluded	3	Included	Included
86CKET	2	Included	Excluded	3	Included	Included
8D7TWY	2	Included	Excluded	2	Inconclusive / Uninterpretable	Included
8DHP6P	2	Included	Excluded	3	Included	Included
8ED97Q	2	Included	Excluded	At least 3	Included	Included
9BCJ3N	2	Included	Excluded	3	Included	Included
9JMLNP	2	Included	Excluded	3	Included	Included
9YWPQV	2	Included	Excluded	3	Included	Included
A24CZT	2 + possible trace of 3rd	Included	Excluded	3	Included	Included
AEQJXU	2	Included	Excluded	3	Included	Included
ANQ9EV	2	Included	Excluded	3	Included	Included
CLLZMQ	2	Included	Excluded	3	Included	Included
D6TPDT	2	Included	Excluded	3	Included	Included
ELDZEL	2	Included	Excluded	3	Included	Included
FUH8UL	2	Included	Excluded	3	Included	Included
HKPXXM	2	Included	Excluded	3	Included	Included
HTEJ4L	2	Included	Excluded	3	Included	Included
J9R83A	3	Included	Inconclusive / Uninterpretable	3	Included	Included
K68LKK	2	Included	Excluded	At least 3	Included	Included

TABLE 4

WebCode	# of Contributors	Item 3 Conclusion		# of Contributors	Item 4 Conclusion	
		Item 1	Item 2		Item 1	Item 2
NQUM6A	2	Included	Excluded	At least 3	Included	Included
NXRCLD	2	Included	Excluded	At least 3	Inconclusive / Uninterpretable	Inconclusive / Uninterpretable
RFFZHD	2	Included	Excluded	3	Included	Included
UBJRCA	at least 2 contributors (including at least 1 male and at least 1 female)	Included	Excluded	≥3 contributors (including ≥2 males and ≥1 female)	Included	Included
UYQCM9	2	Included	Excluded	3	Included	Included
W7YK4Z	2	Included	Excluded	3	Included	Included
XNCLB8	2	Included	Excluded	3	Included	Included
ZL2HD2	2	Included	Excluded	3 or more	Included	Included
ZT22FW	2	Included	Excluded	At least 3	Included	Included

Conclusions Response Summary				Participants reporting conclusions: 30	

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 4	
		Item 1	Item 2	Item 1	Item 2
	Included	30	0	28	29
	Excluded	0	29	0	0
	Inconclusive	0	1	2	1
	No Response	0	0	0	0
	Total	30	30	30	30

Statistical Analysis for Item 3

TABLE 5

WebCode	Item 3 Methods & Results
2WFYKY	**Method(s)**: Likelihood Ratio **Stats Analysis:** The evidence is 190 sextillion times more likely if the victim is a contributor to the DNA mixture than if she is not a contributor. This is very strong support for inclusion. The suspect is excluded.
46G4NY	**Method(s)**: Likelihood Ratio **Stats Analysis:** The DNA profile from item 3 is 1 billion times more likely if item 1 (victim) and one unknown person are contributing rather than if two unknown persons are contributing. Item 2 (suspect) is excluded as a contributor to the STR and Y-STR DNA profiles from this item.
6NDN3Y	**Method(s)**: Likelihood Ratio **Stats Analysis:** The genetic profile obtained from Item 3 is interpreted as a mixture of DNA from 2 contributors. Given this genetic profile, it is 6.1 quadrillion times more likely to observe this genetic profile if Item 1 (victim) and one unknown individual are the contributors than if two unknown individuals are the contributors.
86CKET	**Method(s)**: Likelihood Ratio **Stats Analysis:** The DNA profile from item 3 indicates a mixture of two individuals consistent with male and female origin. This mixed DNA profile is approximately 340 quadrillion (3.40×10^{17}) times more likely to be observed if the Victim (001-AA Item 1) and an unidentified male are the contributors than if two random, unrelated African Americans are the contributors; approximately 1.77 quadrillion (1.77×10^{15}) times more likely than if two random, unrelated Caucasians are the contributors; and approximately 29.6 quadrillion (2.96×10^{16}) more likely than if two random, unrelated Southwestern Hispanics are the contributors.
8D7TWY	**Method(s)**: Random Match Probability **Stats Analysis:** A mixed DNA profile (PowerPlex Fusion 5C) consisting of DNA from at least two contributors was obtained from the stain on the pocket knife (item 3). A major female contributor and a minor male contributor were obtained from item 3. The DNA profile for the major contributor in item 3 is consistent with the DNA profile of the victim (item 1). Therefore, the individual represented by item 1 (victim reference sample) can not be excluded as a contributor of the DNA mixture obtained from item 3. The probability of selecting a random, unrelated individual having a DNA profile identical to item 3 at the loci observed is 1 in 1.75E+34 for African Americans, 1 in 8.04E+30 for Caucasian Americans, 1 in 8.20E+30 for Hispanic Americans, and 1 in 2.49E+32 for Asian Americans. The DNA profile for the minor contributor of item 3 is not consistent with the DNA profile of the suspect (item 2). Therefore, the individual represented by the suspect reference sample (item 2) is excluded as a contributor of the DNA mixture obtained from item 3.
8ED97Q	**Method(s)**: Likelihood Ratio **Stats Analysis:** The mixed DNA profile are 1.7 quintillion (1.7 x 10e18), 150 quintillion (150 x 10e18) and 360 quadrillion (360 x 10e15) TIMES more likely; IF they originated from reference sample "Item 1" (Female Victim – Hispanic) and one unknown individual RATHER THAN; IF they originated from two unknown unrelated individuals as calculated based on the [Location-identifying population databases].
AEQJXU	**Method(s)**: Likelihood Ratio, 6.09E14 **Stats Analysis:** H1:the mixture is made up of the victim's genetic profile (item 1) and the genetic profile of an unknown unrelated person. H2:the mixture is made up of genetic profiles of two unknown unrelated people. LR=6.09E14 (drop-out = 0.1, drop-in = 0.05, Theta = 0.01)

TABLE 5

WebCode	Item 3 Methods & Results
ANQ9EV	**Method(s)**: Likelihood Ratio **Stats Analysis:** The statistical analysis was done by STRmixTM software. For Item 1 Conclusion: LR=3.02E+25(99%1-SIDED LOWER HPD INTERVAL). The prosecution proposition means the DNA obtained from Item 3 originatd from the victim and an unknown ,unrelated individual. The defence proposition means the DNA obtained from Item 3 originatd from two unknown ,unrelated individuals. For Item 2 Conclusion: LR=0. The prosecution proposition means the DNA obtained from Item 3 originatd from the suspect and an unknown ,unrelated individual. The defence proposition means the DNA obtained from Item 3 originatd from two unknown ,unrelated individuals.
CLLZMQ	**Method(s)**: Likelihood Ratio
D6TPDT	**Method(s)**: Likelihood Ratio **Stats Analysis:** Item 1: 1.889e+25. Item 2: 4.628e-22.
FUH8UL	**Method(s)**: Likelihood Ratio **Stats Analysis:** The file types provided were not in the correct format for statistical calculations to be conducted.
HKPXXM	**Method(s)**: Likelihood Ratio **Stats Analysis:** The DNA profile of Item 3 is at least 5.2032E24 times more likely if it came from Item 1 and an unknown unrelated person than it came from two unrelated members of the Hispanic population. Item 2 is excluded as a possible contributor to DNA profile of Item 3 (LR Total = 0)
HTEJ4L	**Method(s)**: Likelihood Ratio **Stats Analysis:** Calculated as victim (Item 1) + 1 unknown individual vs 2 unknown individuals. Calculation assumes that all individuals are unrelated. Only loci which are included in NGM SElect have been included in the calculation (ie. not all loci as our software is not set up for all of the loci within Globalfiler). Likelihood ratio (LR) calculated is in excess of 1,000,000,000 times more likely under Hp (victim + one unknown individual) rather than under Hd (two unknown individuals). NB. In the [Country] there is a ceiling limit of 1,000,000,000 to be used when reporting LRs even if the LR calculated is greater than 1,000,000,000.
J9R83A	**Method(s)**: Likelihood Ratio **Stats Analysis:** DNA typing results were obtained from Item 3. The DNA mixture is consistent with the DNA of the victim (Item 1) and at least 2 additional unknown contributors with at least one being male. The probability of observing these DNA typing results is at least 17.0 octillion (17.0 E27) times more likely if it originated from Victim (Item 1) and 2 unknown individuals than if it originated from 3 unknown individuals. It is inconclusive wheter POI (Item 2) is a contributor to the DNA results detected in Item 3 as the likelihood ratio does not provide support for inclusion or exclusion. No additional conclusions can be made regarding the unknown contributors to the DNA mixture at this time. This analysis provides very strong support for the proposition that Victim (Item 1) is a contributor to the DNA mixture detected from Item 3.
K68LKK	**Method(s)**: Likelihood Ratio **Stats Analysis:** A mixed DNA profile of two individuals was developed from bloodstain on the pocket knife "Item 3". The DNA profile obtained from the reference sample "Item 1" is being one of the contributor, however reference sample "Item 2" is excluded from being one of the contributor to this mixed DNA profile. The mixed DNA profile is 110 billion, 390 billion and 5.5 billion times more likely; if it originated from "Item 1" and an unknown individual rather than; if it originated from two unknown unrelated individuals as calculated based on the [Location-identifying population databases].

TABLE 5

WebCode	Item 3 Methods & Results
NQUM6A	**Method(s)**: Likelihood Ratio **Stats Analysis:** A mixed DNA profile of two (2) contributors was developed from "Item 3". The DNA profile obtained from "Item 1" is consistent with being one of the contributor to this mixed DNA profile. The DNA profile obtained from "Item 2" is excluded from being the other contributor to the mixed DNA profile. The mixed DNA profile are 1.7 quintillion (1.7 x 10e18), 150 quintillion (150 x 10e18) and 360 quadrillion (360 x 10e15) TIMES more likely IF they originated from "Item 1" (victim) and one unknown individual RATHER THAN; IF they originated from two unknown unrelated individuals as calculated based on the [Location-identifying population databases].
NXRCLD	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis:** The DNA profile obtained from Item 3 was found to be a mixed DNA profile of at least two contributors. The DNA profile obtained from Item 1 cannot be excluded as one of the contributors of the mixed DNA profile. The proportion of the [Country] (Hispanic) population whose individual DNA profiles cannot be excluded as contributors of the mixed DNA profile is 3.5×10^{-15}
RFFZHD	**Method(s)**: Likelihood Ratio **Stats Analysis:** Assuming the genetic profile detected on Item 3-(stain on the pocket knife) came from the Female Victim-Item 1, and an Unknown Male we concluded that: The genetic profile detected on Item 3 is aproximately: 199 quadrillions times more likely using the Hispanic population database, 177 quadrillions times more likely using the Caucasian population database, 2 quintillions times more likely using the African American population database, to have come from the Female Victim-Item 1 and an Unknown Male, than from any other unknown persons chosen randomly.
UBJRCA	**Method(s)**: Likelihood Ratio **Stats Analysis:** Under the assumption that the VICTIM (Item 1) and one unrelated person selected at random from the general population are contributors to the mixture developed from the STAIN ON THE POCKET KNIFE (Item 3), the likelihood of observing the mixed source profile is $\geq 1,000,000$ times greater (actual LR available upon request) than if it is assumed that two unrelated persons selected at random from the general population are contributors to this mixed-source sample.
UYQCM9	**Method(s)**: Likelihood Ratio **Stats Analysis:** ITEM1+1UNKN vs 2UNKN => (D.O.=12%) LRMIX STUDIO: 1.4E16 ; LAB RETRIEVER: 6.5E13 ; EFM: 1.2E32 ; DNAVIEW: 2.0E32. ITEM2 +1UNKN vs 2UNKN => (D.O.=10%) LRMIX STUDIO: 3.0E-25 ; LAB RETRIEVER: 1.3E-25 ; EFM: 1.3E-27 ; DNAVIEW: 2.0E-228.
XNCLB8	**Method(s)**: Likelihood Ratio **Stats Analysis:** Assuming that the genetic profile has two contributors Victim Item 1 and an unknown contributor we conclude that the genetic profile detected on Item 3 is approximately: 199 Quatrillion times more likely using the Hispanic Population, 177 Quatrillion times more likely using the Caucasian Population, 2 Quintillion times more likely using the African American Population, to have come from the Victim Item 1 and an unknown contributor than from two unknown contributors chosen randomly.
ZL2HD2	**Method(s)**: [Participant did not report a method.] **Stats Analysis:** 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. NSD: No Size Data, INC: Inconclusive, N/A: Not Applicable

TABLE 5

WebCode	Item 3 Methods & Results
ZT22FW	**Method(s)**: Likelihood Ratio
	Stats Analysis: A mixed DNA profile of two (2) contributors was developed from "Item 3". The DNA profile obtained from "Item 1" is being one of the contributor to this mixed DNA profile. The DNA profile obtained from "Item 2" is excluded from being the other contributor to this mixed DNA profile. The mixed DNA profile are 1.7 quintillion (1.7x10e18), 150 quintillion (150x10e18) and 360 quadrillion (360x10e15) TIMES more likely; IF they originated from "Item 1" (Female Victim) and one unknown individual RATHER THAN; IF they originated from two unknown unrelated individual as calculated based on the [Location-identifying population databases].

Statistical Analysis for Item 4

TABLE 6

WebCode	Item 4 Methods & Results
2WFYKY	**Method(s)**: Likelihood Ratio **Stats Analysis**: The evidence is 13 trillion times more likely if the victim is a contributor to the DNA mixture than if she is not a contributor. This is very strong support for inclusion. The evidence is 160 billion times more likely if the suspect is a contributor to the mixture than if he is not a contributor. This is very strong support for inclusion.
46G4NY	**Method(s)**: Likelihood Ratio **Stats Analysis**: The DNA profile from item 4 is 1 billion times more likely if item 1 (victim), item 2 (suspect) and an unknown person are contributing than if item 1 (victim) and two unknown, unrelated persons are contributing. The DNA profile from the Y-STR profile from item 4 is a mixture of two males and is uninterpretable. As such, no determinations of inclusion or exclusion could be made for item 2 (suspect) to the Y-STR profile from item 4.
6NDN3Y	**Method(s)**: Likelihood Ratio **Stats Analysis**: The genetic profile obtained from Item 4 is interpreted as a mixture of DNA from 3 contributors. Given this genetic profile, assuming Item 1 (victim) is a contributor, it is 599 billion times more likely to observe this genetic profile if Item 1 (victim), Item 2 (suspect) and one unknown individual are the contributors than if Item 1 (victim) and two unknown individuals are the contributors.
86CKET	**Method(s)**: Likelihood Ratio **Stats Analysis**: The DNA profile obtained from this item is a mixture of three individuals consistent with both male and female origin. The DNA profile obtained from this item is a mixture consistent with the combined DNA profiles from the Victim (001-AA Item 1), the Suspect (001-AB Item 2), and the unidentified male individual from 001-AC Item 3 (Questioned sample from the stain on the pocket knife). This mixed DNA profile is approximately 141 million (1.41×10^8) times more likely to be observed if the Victim (001-AA Item 1), the Suspect (001-AB Item 2) and an unidentified male are the contributors than if the Victim (001-AA Item 1) and two random, unrelated African American males are the contributors; approximately 26.9 million (2.69×10^7) times more likely than if the victim and two random, unrelated Caucasian males are the contributors; and approximately 15.1 million (1.51×10^7) more likely than if the victim and two random, unrelated Southwestern Hispanics are the contributors.
8D7TWY	**Method(s)**: Random Match Probability **Stats Analysis**: A mixed DNA profile (PowerPlex Fusion 5C) consisting of DNA from at least two contributors was obtained from the victim's finger nail scrapings (item 4). A major male contributor and a minor male contributor were obtained from item 4. The DNA profile for the major contributor in item 4 is consistent with the DNA profile of the suspect (item 2). Therefore, the individual represented by item 2 (suspect reference sample) can not be excluded as a contributor of the DNA mixture obtained from item 4. The probability of selecting a random, unrelated individual having a DNA profile identical to item 4 at the loci observed is 1 in 3.25E+30 for African Americans, 1 in 7.64E+26 for Caucasian Americans, 1 in 1.36E+27 for Hispanic Americans, and 1 in 1.81E+26 for Asian Americans. The DNA typing results for Item 4 in comparison to item 1 (victim reference sample) are inconclusive. The minor contributor DNA profile is unknown.
8ED97Q	**Method(s)**: Likelihood Ratio **Stats Analysis**: The mixed DNA profile are 2.2 trillion (2.2 x 10e12), 150 trillion (150 x 10e12) and 390 billion (390 x 10e9) TIMES more likely; IF they originated from reference samples "Item 1" (Female Victim – Hispanic) and "Item 2" (Male Suspect – Caucasian) and one unknown individual RATHER THAN; IF they originated from reference sample "Item 1" (Female Victim – Hispanic) and two unknown unrelated individuals as calculated based on the [Location-identifying population databases].

TABLE 6

WebCode	Item 4 Methods & Results
AEQJXU	**Method(s)**: Likelihood Ratio, 3.90E10
	Stats Analysis: H1:the mixture is made up of the victim's genetic profile (item 1), the suspect's genetic profile (item 2) and the genetic profile of an unknown unrelated person. H2:the mixture is made up of the victim's genetic profile (item 1) and the genetic profiles of two unknown unrelated people. LR=3.90E10 (drop-out = 0.1, drop-in = 0.05, Theta = 0.01)
ANQ9EV	**Method(s)**: Likelihood Ratio
	Stats Analysis: The statistical analysis was done by STRmixTM software. For Item 1 Conclusion: LR=7.88E+14(99%1-SIDED LOWER HPD INTERVAL). The prosecution proposition means the DNA obtained from Item 4 originatd from the victim and two unknown ,unrelated individuals. The defence proposition means the DNA obtained from Item 4 originatd from three unknown ,unrelated individuals. For Item 2 Conclusion: LR=5.56E+22(99%1-SIDED LOWER HPD INTERVAL). The prosecution proposition means the DNA obtained from Item 4 originatd from the victim, suspect and an unknown ,unrelated individual. The defence proposition means the DNA obtained from Item 4 originatd from the victim and two unknown ,unrelated individuals.
CLLZMQ	**Method(s)**: Likelihood Ratio
D6TPDT	**Method(s)**: Likelihood Ratio
	Stats Analysis: Item 1: 2.149e+12. Item 2: 4.651e+11.
FUH8UL	**Method(s)**: Likelihood Ratio
	Stats Analysis: The file types provided were not in the correct format for statistical calculations to be conducted.
HKPXXM	**Method(s)**: Likelihood Ratio
	Stats Analysis: The DNA profile of Item 4 is at least 3.2342E14 times more likely if it came from Item 1 and an unknown unrelated person than it came from two unrelated members of the Hispanic population. The DNA profile of Item 4 is at least 2.2306E12 times more likely if it came from Item 2 and an unknown unrelated person than it came from two unrelated members of the Caucasian population.
HTEJ4L	**Method(s)**: Likelihood Ratio
	Stats Analysis: Calculated as Victim (Item 1) + Suspect (Item 2) + 1 unknown individual vs Victim (Item 1) + 2 unknown individuals. Calculation conditions on the presence of DNA from the victim (as sample taken from her fingernails and therefore DNA from her can be expected) and assumes that all individuals are unrelated. Only loci which are included in NGM SElect have been included in the calculation (ie. not all loci as our software is not set up for all of the loci within Globalfiler). Likelihood ratio (LR) calculated is approximately 34,000,000 times more likely under Hp (victim + suspect + one unknown individual) rather than under Hd (victim + two unknown individuals). NB. In the [Country] there is a ceiling limit of 1,000,000,000 to be used when reporting LRs even if the LR calculated is greater than 1,000,000,000.
J9R83A	**Method(s)**: Likelihood Ratio
	Stats Analysis: DNA typing results were obtained from Item 4. The DNA mixture detected in Item 4 is consistent with the DNA of Victim (Item 1), POI (Item 2), and an unknown male. The probability of observing this DNA mixture is at least 191 septillion (191 E24) times more likely if it originated from Victim, POI, and an unknown male than if it originated from Victim and 2 unknown males. The Victim is expected to be present in the DNA mixture and is assumed to be a contributor. No additional conclusions can be made regarding the unknown male contributor to the DNA mixture at this time. This analysis provides very strong support for the proposition that POI is a contributor to the DNA detected from Item 4

TABLE 6

WebCode	Item 4 Methods & Results
K68LKK	**Method(s)**: Likelihood Ratio **Stats Analysis**: A mixed DNA profile of at least three individuals was developed from victims's fingernail scrapings "Item 4". The DNA profiles obtained from the reference sample "Item 1" and "Item 2" are consistent with being the contributors to this mixed DNA profile. The mixed DNA profile is 5.7 million, 5.7 million and 1.2 million times more likely; if it originated from "Item 1", "Item 2" and an unknown individual rather than; if it originated from "Item 1" and two unknown unrelated individuals as calculated based on the [Location-identifying population databases].
NQUM6A	**Method(s)**: Likelihood Ratio **Stats Analysis**: A mixed DNA profile of at least three (3) contributors was developed from "Item 4". The DNA profile obtained from "Item 1" and "Item 2" is consistent with being the contributor to this mixed DNA profile. However other contributor cannot be identified. The mixed DNA profile are 2.2 trillion (2.2 x 10e12), 150 trillion (150 x 10e12) and 390 billion (390 x 10e9) TIMES more likely IF they originated from "Item 1" (victim), "Item 2" (suspect) and one unknown individual RATHER THAN; IF they originated from "Item 1" and two unknown unrelated individuals as calculated based on the [Location-identifying population databases].
NXRCLD	**Method(s)**: [Participant did not report a method.] **Stats Analysis**: The DNA profile obtained from Item 4 was found to be an inconclusive, mixed DNA profile of at least three contributors that cannot be positively identified, hence no DNA comparison was made.
RFFZHD	**Method(s)**: Likelihood Ratio **Stats Analysis**: Assuming the genetic profile detected on Item 4-(victim's fingernail scrapings) came from the Female Victim-Item 1, Male Suspect-Item 2 and an Unknown Male we concluded that: The genetic profile detected on Item 4 is approximately: 39 trillions times more likely using the Hispanic population database, 7 trillions times more likely using the Caucasian population database, 268 trillions times more likely using the African American population database, to have come from the Female Victim-Item 1, Male Suspect-Item 2 and an Unknown Male, than from any other unknown persons chosen randomly.
UBJRCA	**Method(s)**: Likelihood Ratio **Stats Analysis**: Under the assumption that the VICTIM (Item 1) and two unrelated persons selected at random from the general population are contributors to the mixture developed from the VICTIM'S FINGERNAIL SCRAPINGS (Item 4), the likelihood of observing the mixed source profile is ≥1,000,000 times greater (actual LR available upon request) than if it is assumed that three unrelated persons selected at random from the general population are contributors to this mixed-source sample. Under the assumption that the Suspect (Item 2) and two unrelated persons selected at random from the general population are contributors to the mixture developed from the VICTIM'S FINGERNAIL SCRAPINGS (Item 4), the likelihood of observing the mixed source profile is ≥1,000,000 times greater (actual LR available upon request) than if it is assumed that three unrelated persons selected at random from the general population are contributors to this mixed-source sample.
UYQCM9	**Method(s)**: Likelihood Ratio **Stats Analysis**: ITEM1+2UNKN vs 3UNKN => (D.O.=15%) LRMIX STUDIO: 8.7E10 ; LAB RETRIEVER: 1.5E9 ; EFM: 1.8E18 ; DNAVIEW: 7.0E26. ITEM2 +2UNKN vs 3UNKN => (D.O.=15%) LRMIX STUDIO: 6.5E8 ; LAB RETRIEVER: 5.5E7 ; EFM: 6.7E13 ; DNAVIEW: 8.0E18. ITEM1 + ITEM2 +1UNKN vs 3UNKN => (D.O.=15%) LRMIX STUDIO: 3.1E22 ; LAB RETRIEVER: 2.4E19 ; EFM: 6.1e39 ; DNAVIEW: 2.0E51.

TABLE 6

WebCode	Item 4 Methods & Results
XNCLB8	**Method(s)**: Likelihood Ratio
	Stats Analysis: Assuming that the genetic profile has three contributors Victim Item 1, Suspect Item 2 and an unknown contributor we conclude that the genetic profile detected on Item 4 is approximately: 3 Trillion times more likely using the Hispanic Population, 7 Trillion times more likely using the Caucasian Population, 268 Trillion times more likely using the African American Population, times more likely to have come from Victim Item 1, Suspect Item 2 and an unknown contributor than from three unknown contributors chosen randomly.
ZL2HD2	**Method(s)**: [Participant did not report a method.]
	Stats Analysis: 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. NSD: No Size Data, INC: Inconclusive, N/A: Not Applicable
ZT22FW	**Method(s)**: Likelihood Ratio
	Stats Analysis: A mixed DNA profile of at least three (3) contributors was developed from "Item 4". The DNA profile obtained from "Item 1" and "Item 2" are consistent with being the contributors to this mixed DNA profile whereas other contributor cannot be conclusively distinguished. The mixed DNA profile are 2.2 trillion (2.2×10^{12}), 150 trillion (150×10^{12}) and 390 billion (390×10^{9}) TIMES more likely; IF they originated from "Item 1" (Female Victim) ,"Item 2" (Male Suspect) and one unknown individual RATHER THAN; IF they originated from "Item 1" (Female Victim) and one unrelated individual as calculated based on the [Location-identifying population databases].

Databases Used

TABLE 7

WebCode	Databases Used
2WFYKY	Item 3: FBI expanded Item 4: FBI expanded
46G4NY	Item 3: Butler, J.M., Hill, C.R., Coble, M.D. (2012) Variability of new STR loci and kits in U.S. population groups. Profiles in DNA. 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: e82-e83. Item 4: Butler, J.M., Hill, C.R., Coble, M.D. (2012) Variability of new STR loci and kits in U.S. population groups. Profiles in DNA. 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: e82-e83.
6NDN3Y	Item 3: NIST Item 4: NIST
86CKET	Item 3: PopStats Expanded FBI STR2015 Item 4: PopStats Expanded FBI STR 2015
8D7TWY	Item 3: promega Item 4: [No databases were reported by this participant for this item.]
8ED97Q	Item 3: [Location-identifying population databases] Item 4: [Location-identifying population databases]
AEQJXU	Item 3: Personal databases Item 4: Personal databases
ANQ9EV	Item 3: [Location-identifying population databases] Item 4: [Location-identifying population databases]
CLLZMQ	Item 3: Global Filer ThermoFisher 2016 Item 4: GlobalFiler Thermofisher 2016
D6TPDT	Item 3: NIST Combined 2017 Item 4: NIST Combined 2017
FUH8UL	Item 3: [Ethnicity] Caucasian sub-population DNA Database Item 4: [Ethnicity] Caucasian sub-population DNA Database
HKPXXM	Item 3: Hispanic population (FBI) Item 4: Hispanic and Caucasian populations (FBI)
HTEJ4L	Item 3: NDU1 (White), NDU2 (Black), NDU3 (South Asian), NDU4 (East Asian). These are standard [Country] Government allele frequency datasets. No specific Hispanic allele frequency dataset available. Therefore the above datasets were each considered and the most conservative LR used. Item 4: NDU1 (White). This is one of several standard [Country] Government allele frequency datasets. As the male suspect is described as being Caucasian, then only the NDU1 dataset used for the LR calculation.
K68LKK	Item 3: [Location-identifying population databases] Item 4: [Location-identifying population databases]
NQUM6A	Item 3: [Location-identifying population databases] Item 4: [Location-identifying population databases]
NXRCLD	Item 3: NIST 1036 Revised U.S. Population Dataset (July 2017), Allele Frequencies https://strbase.nist.gov/1036-Revised-Allele-Freqs-PopStats-July-19-2017.xlsx Item 4: [No databases were reported by this participant for this item.]

TABLE 7

WebCode	Databases Used
RFFZHD	Item 3: The data base used in the statistical analysis for item 3 was the NIST's U.S. STR Population Database for Caucasian (Cau), African American (Blk), Hispanic (Hsp), Asian (Asn) and Combined Population Groups (August 2017).
	Item 4: The data base used in the statistical analysis for item 4 was the NIST's U.S. STR Population Database for Caucasian (Cau), African American (Blk), Hispanic (Hsp), Asian (Asn) and Combined Population Groups (August 2017).
UBJRCA	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
UYQCM9	Item 3: C.R. Hill, D.L. Duewer, M.C. Kline, M.D. Coble, J.M. Butler, U.S. population data for 29 autosomal STR loci, Forensic Sci. Int. Genet. 7 (2013) e82–e83.
	Item 4: C.R. Hill, D.L. Duewer, M.C. Kline, M.D. Coble, J.M. Butler, U.S. population data for 29 autosomal STR loci, Forensic Sci. Int. Genet. 7 (2013) e82–e83.
XNCLB8	Item 3: NIST US STR Population Database for Caucasian, African American, Hispanic (August 2017).
	Item 4: NIST US STR Population Database for Caucasian, African American, Hispanic (August 2017).
ZT22FW	Item 3: [Location-identifying population databases]
	Item 4: [Location-identifying population databases]

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
86CKET	Qiagen Investigator 24 plex QS, Qiagen Investigator 24 plex GO!
ANQ9EV	FastDirectTM DNA ID system 44Y; DNA TyperTM 21 kit; DNA TyperTM Y36 kit.
HTEJ4L	NGM Select, ESI-17, PPY23, ForenSeq DNA Signature Prep kit (massively parallel sequencing).
K68LKK	AmpFLSTR Identifiler Direct PCR Amplification Kit, AmpFLSTR Identifiler Plus PCR Amplification Kit, GlobalFiler PCR Amplification Kit, GlabalFiler express PCR Amplification Kit, AmpFLSTR Y-filer PCR Amplification kit, AmpFLSTR Minifiler PCR Amplification kit.
NXRCLD	GlobalFiler As of May 2022. This Laboratory does not utilise any YSTR kits.
RFFZHD	At our laboratory we have the following amplification kits: Identifiler, Yfiler, 24 Plex QS & Go, and Flex Plex 27.
XNCLB8	Investigator 24 Plex QS, Investigator 24 Plex GO!, Identifiler, Y-filer, FlexPlex 27.
ZT22FW	Globalfiler Casework Amplification Kit. Globalfiler Express Amplification Kit. Yfiler PCR Amplification Kit.

Additional Comments

TABLE 9

WebCode	Additional Comments
86CKET	* notations indicate the presence of alleles less than stochastic threshold. Alleles less than stochastic threshold are not listed. For item 4- the profile listed in the major boxes is the deduced male for CODIS entry - it isn't a major. +notation indicates obligate allele for CODIS entry.
8ED97Q	Statistical calculation was carried out using DNAVIEW software version 37.56 and calculated at 21 loci.
CLLZMQ	DNA Analysis for Item 3: LR = Item1 + 1UN / 2UN. drop out for Item 1 0.00, drop out for UN 0.01. LR = 1,41840E015. The probability of the evidence is 1,411840E015 times more likely if the stain on the pocket knife came from Female Victim (Item 1) and the unknown, unrelated individual, than if it came from two unknown unrelated individuals. The Male Suspect (Item 2) is excluded as a possible contributor to the DNA obtained from Item 3. DNA Analysis for Item 4: LR = Item1 + Item2 + 1UN / Item 1 + 2UN. drop out for Item 1 and Item 2 0.00, drop out for UN 0.01. LR = 1,31314E012. The probability of the evidence is 1,31314E012 times more likely if the victim's fingernail scrapings came from the Female Victim (Item 1), the Male Suspect (Item 2) and the unknown, unrelated individual, than if it came from the Female Victim (Item 1) and two unknown unrelated individuals.
FUH8UL	Coment on NOC for item 4: vWA could indicate a fourth contributor due to the imbalance between the 14,20 genotype. However, when stutter is taken into account as well as the 20 allele being of a higher molecular weight than the 14, a conclusion that NOC=3 is justifiable. Comment on statistical analysis: The file formats provided were not compatible with your statistical software. However I would expect all LRs to be >100 billion which is the upper limit of our reportable threshold.
HTEJ4L	The LR calculations carried out only take into account the NGM SElect loci within Globalfiler as we do not have a validated software for the calculation of likelihood ratios for full Globalfiler profiles. None of the DNA profiling kits used in this CTS trial are kits used by this laboratory in the [Country]. The standard DNA profiling kits used in [Countries] are either NGM SElect or ESI-17, both of which are referred to as DNA-17 chemistries and both analyse the same set of loci. Some labs use NGM SElect and others use ESI-17.
NQUM6A	The statistical calculation was carried out using DNA View Software and calculated at 21 loci
RFFZHD	A stutter was detected on item 3 at D3S1358.
XNCLB8	Stutter in D3S1358 of Item 3
ZT22FW	The statistical calculation was carried out using DNA View Software and calculated at 21 loci.

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 22-5881: DNA Interpretation

DATA MUST BE SUBMITTED BY **June 6, 2022, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234A   WebCode: AXFXBJ

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.

<u>Scenario:</u>

Two male individuals were reportedly involved in the assault and robbery of a female victim. The female victim fought off her attackers and was then stabbed. The attacker with the knife was then tackled and injured by a male bystander during the assault. The attacker freed himself from the male bystander, stole the female victim's purse and both attackers fled the scene. A second witness to the assault called 911 and the female victim was brought to the hospital for treatment. A male suspect matching the description of one of the attackers was identified and brought into custody. A pocket knife containing reddish brown stains was found in the suspect's car and was collected as evidence. The stains were swabbed and confirmed as blood by the Serology unit and subsequently submitted for DNA analysis (Item 3). Fingernail scrapings were collected from the victim at the hospital and sent to the DNA unit for 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.
Please note: The evidence file for this test cycle was updated on 4/20/22 to update the electropherogram PDF files for Identifiler™ Plus only. The MD5 hash value of the original evidence file is 186e752784889994113723ab9bc05283 and the SHA1 value is 3703cfbe359d7c530200ca1b3e1d839f197808b5. The MD5 and SHA1 hash values for the updated evidence files are listed below.

<u>**Items Submitted (Sample Pack INT1):**</u>
Item 1: DNA profile from reference sample (Female Victim - Hispanic)
Item 2: DNA profile from reference sample (Male Suspect - Caucasian)
Item 3: DNA profile from the stain on the pocket knife
Item 4: DNA profile from the victim's fingernail scrapings

To verify a complete and accurate download, the hash value for the downloaded .ZIP file is as follows:
22-5881 Data for Participants.zip MD5 hash value: 932fe9d815de9063993acb5894a4dae5
22-5881 Data for Participants.zip SHA1 hash value: 37dee74d8a3c98d296b9b426badd6ad00d5af751

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:

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

☐ GlobalFiler™   ☐ Investigator® 24plex   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ Identifiler® Plus   ☐ HID format   ☐ 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:

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

☐ YFiler® Plus   ☐ PowerPlex® Y23   ☐ 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:

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

☐ GlobalFiler™   ☐ Investigator® 24plex   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ Identifiler® Plus   ☐ HID format   ☐ 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:

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

☐ YFiler® Plus   ☐ PowerPlex® Y23   ☐ 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:   Please indicate the electropherogram(s) reviewed for this test.

☐ GlobalFiler™   ☐ Investigator® 24plex   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ Identifiler® Plus   ☐ HID format   ☐ 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:   Please indicate the electropherogram(s) reviewed for this test.
☐ YFiler® Plus   ☐ PowerPlex® Y23   ☐ 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									

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.):

   <u>**Item 1 Conclusion**</u>

   ○ 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.

   <u>**Item 2 Conclusion**</u>

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

☐ GlobalFiler™   ☐ Investigator® 24plex   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ Identifiler® Plus   ☐ HID format   ☐ 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:   Please indicate the electropherogram(s) reviewed for this test.

☐ YFiler® Plus   ☐ PowerPlex® Y23   ☐ 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									

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.):

   <u>**Item 1 Conclusion**</u>

   ○ 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.

   <u>**Item 2 Conclusion**</u>

   ○ 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)