Collaborative Testing Services, Inc
FORENSIC TESTING PROGRAM

DNA Interpretation Test No. 18-588
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 25 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 and Item 2 was created using blood collected from a male donor. The Item 3 mixture was created by combining one part of blood from the Item 1 female donor and one part of blood from the Item 2 male donor. The Item 4 mixture was created by combining three parts of blood from Item 2 male donor and one part of blood from a different male donor.

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.

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	15,16	18,25	14,15	17,17	11,11	8,12
	10,11	14,17	17,18	11,12	11,11	15,15
	12,15	30,31.2	14,17	X,X	10,11	22,22
	13,14	7,14	21.2,26.2	5,8	9,12	16,16
	NM	NM	NM	NM		
2	14,15	17,20	11,14	16,18	12,12	10,10
	10,14	12,13	19,21	8,12	8,12	18,18
	15,16	29,30	16,16	X,Y	9,12	21,24
	11,13	11,12	26.2,28.2	7,9.3	10,11	15,18
	10	*	*	2		
3	14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
	10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
	12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
	11,13,14	7,11,12,14	21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
	10	*	*	2		
4	14,15†	17,18,20,25	11,14	16,18	11,12	9,10†
	10,13,14	12,13†	19,20,21	8,12†	8,9,12	16,18†
	13,15,16	29,30,32.2	15,16	X,Y	9,12†	20,21,24
	11,13	11,12†	26.2,28.2†	7,9.3	8,10,11,12	14,15,16,18
	10†	*	*	2		

* Results were not received from a minimum of 10 participants for the loci indicated.
† Additional alleles may be present depending on laboratory thresholds.

YSTR Results

Results compiled from predistribution laboratories and a consensus of participants.

Item	DYS19	DYS385	DYS389-I	DYS389-II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		
2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	*	*
	*	*	*	21	*	11		
3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	*	*
	*	*	*	21	*	11		
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11†	19,21	16,17	16,18	*	*
	*	*	*	21,23	*	11,12		

* Results were not received from a minimum of 10 participants for the loci indicated.
† Additional alleles may be present depending on laboratory thresholds.

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 FSA, HID, and PDF formats, as available) of four items; two reference items and two evidence items. The EPG data included was produced from the following amplification kits: GlobalFiler™, PowerPlex® Fusion 5C, PowerPlex® Fusion 6C, YFiler™, 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, the female victim and male suspect (1:1 ratio). Item 4 was a mixture of samples from two individuals including the male suspect and another male contributor for whom no reference sample was provided (3:1 ratio respectively).

STR Data
Twenty-five participants evaluated the provided STR data. Of these fifteen reported examining the GlobalFiler™, six reported PowerPlex® Fusion 5C, and four reported PowerPlex® Fusion 6C. All participants that reported data were concordant for reference Items 1 and 2 except for one participant that reported the text "OL" alongside the consensus allele at D18S51 for item 1.

From the Item 3 data, 25 participants reported allelic results. Of these, eleven attempted the deconvolution of this mixture. A consensus was achieved for Item 3, where participants reported all components of the mixture with the exception of one participant who was missing the "14" allele at D10S1248 and one participant who was missing the "25" allele at D2S1338. Participants separating the mixture components were consistent with regards to determining the major profile. Two participants were missing alleles at multiple loci for the minor profile in comparison with the other participants reporting this component.

From the Item 4 data, 25 participants reported allelic results. Of these, twenty attempted the deconvolution of this mixture. Allelic results per loci were more variable for this item. Some of the inconsistencies related to which amplification kit was evaluated and on the interpretation guidelines used.

More participants separated the components of Item 4 in comparison with Item 3. This may be a result of the greater distinction between the contributors within the higher ratio mixture.

YSTR Data
Sixteen participants reported YSTR results. Seven participants reported examining the Powerplex® Y23 data, eight the YFiler™ data and one participant reported examining both YSTR amplification data sets.
For known Item 2, all responding participants reported allelic responses that were concordant.

For questioned Item 3, all responding participants reported allelic responses that were concordant.

From the data belonging to questioned Item 4, most participants reported results that were concordant with the exception of one locus. Results returned for locus DYS439 exhibited some variation; seven participants reporting "11,12" and the rest reporting "11".

Conclusions
For Item 3, all participants reported two contributors (or at least two) for Item 3. In comparison of the Item 3 mixture profile with the two reference profiles, Item 1 (victim) and Item 2 (suspect), all participants reported that both items were included as components of the mixture.

For Item 4, the majority of participants reported that two individuals contributed to the mixture. Others reported "at least two contributors", "two and a trace", "two or more" and one participant reported that there were three contributors in the Item 4 mixture. Most participants excluded Item 1 (victim) as a component of the mixture and three reported "Inconclusive/Uninterpretable". In comparison of the Item 4 mixture profile with the Item 2 reference profile (suspect), all participants reported that Item 2 was included in the mixture.

Interpretation Guidelines

TABLE 1

WebCode	Analytical Threshold (rfu)	Peak Height Ratio (%)	Stochastic Threshold (rfu)
2JKAJH	190 rfu	50%	1160 rfu
3VXMKJ	75rfu	50%	100rfu
AARRJF	Used CTS analytical threshold for GlobalFiler and yFiler	Used CTS peak height ratios for GlobalFiler and yFiler	Used CTS stochastic threshold for GlobalFiler and yFiler
BAKY46	STR 75 rfu, Y-STR 75 rfu	STR 60 %, Y-STR 50%	STR 100 rfu, Y-STR 75 rfu
CLVQ86	GF(75), Y23(75)	GF(60%), Y23(50%)	GF(100), Y23(75)
CWCDG7	See additional comments (Part II)	See additional comments (Part II)	See additional comments (Part II)
DX8JB6	80	60	250
EHMHT6	190 RFU	50%	1160 RFU
EYTMH3	Globalfiler: 75rfu, PPY23: 50rfu	Globalfiler: 60%, PPY23: none	Globalfiler: 100rfu, PPY23: 200rfu @DYS385
FAE266	70 RFU	>4000 RFU: 60%, 3999-1300: 40%, 1299-600: 25%	600 RFU
FPJDQ4	GlobalFiler: 175 rfu YFiler: 100 rfu	GlobalFiler: 75% YFiler: 60%	GlobalFiler: 525 rfu YFiler: 340 rfu
MU8RV3	[Participant did not provide interpretation guidelines]		
NMNLXV	190 rfu	50%	1160 rfu
NW4LZL	75	60	100
NY698W	190 rfus	50%	1160 rfus
PAVKVU	175	60	350
PJBKWK	Y-Filer 50, Globalfiler 75	60% all kits	Y-Filer 100, Globalfiler 150
Q2Z2UQ	75 rfu	60%	100 rfu
QNXBCR	Y-STR only 30 RFU	Y-STR DYS385 50%	Y-STR DYS385 only 400 RFU
QVU6AQ	GlobalFiler 75 rfus, PPY23 50 RFUs	GlobalFiler 60%, PPY23 None	Globalfiler 100 RFUs, PPY23 200 RFUs for DYS385 only
TWJFXN	75, 50	70%, 60%	200, 150
UZYX2R	75	60	230
W9K4MN	150 RFU	70%	600 RFU
Z3KT6K	75 RFU	60%	230 RFU
ZFQTUJ	175	60	350

STR & Amelogenin Results

TABLE 2

WebCode	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

2JKAJH   (FSA Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
13,14	7,14	Not tested	5,8	9,12	16,16
Not detected	Not tested	Not tested	Not tested		

3VXMKJ   GlobalFiler™

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
		21.2,26.2	5,8	9,12	16,16

AARRJF   GlobalFiler™ (PDF Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
N/A	N/A	21.2,26.2	5,8	9,12	16,16
NSD	N/A	N/A	NSD		

BAKY46   GlobalFiler™ (PDF Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
		21.2,26.2	5,8	9,12	16,16

CLVQ86   GlobalFiler™ (PDF Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
		21.2,26.2	5,8	9,12	16,16

CWCDG7   (PDF Format)

15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X	10,11	22
13,14	7,14		5,8	9,12	16
	-				

WebCode	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

DX8JB6   GlobalFiler™ (PDF Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
		21.2,26.2	5,8	9,12	16,16

EHMHT6   (FSA Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
13,14	7,14	NT	5,8	9,12	16,16
ND	NT	NT	NT		

EYTMH3   GlobalFiler™ (PDF Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
NT	NT	21.2,26.2	5,8	9,12	16,16
NR	NT	NT	NR		

FAE266   PowerPlex® Fusion 6C (HID Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
13,14	7,14	21.2,26.2	5,8	9,12	16,16

FPJDQ4   GlobalFiler™ (HID Format)

15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X,X	10,11	22
		21.2,26.2	5,8	9,12	16

MU8RV3   GlobalFiler™ (PDF Format)

15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	OL,15
12,15	30,31.2	14,17	X	10,11	22
		21.2,26.2	5,8	9,12	16

NMNLXV   (FSA Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
13,14	7,14	NT	5,8	9,12	16,16
ND	NT	NT	NT		

WebCode	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

NW4LZL   GlobalFiler™ (PDF Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
		21.2,26.2	5,8	9,12	16,16

NY698W   (FSA Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
13,14	7,14	not tested	5,8	9,12	16,16
not detected	not tested	not tested	not tested		

PAVKVU   GlobalFiler™ (HID Format)

15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X,X	10,11	22
-	-	21.2,26.2	5,8	9,12	16
-	-	-	-		

PJBKWK   GlobalFiler™ (HID Format)

15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X	10,11	22
		21.2,26.2	5,8	9,12	16

Q2Z2UQ   GlobalFiler™ (HID Format)

15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X	10,11	22
		21.2,26.2	5,8	9,12	16

QNXBCR

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
13,14	7,14		5,8	9,12	16,16

QVU6AQ   GlobalFiler™ (PDF Format)

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
		21.2,26.2	5,8	9,12	16,16

WebCode	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

TWJFXN   PowerPlex® Fusion 6C (HID Format)

1					
15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X	10,11	22
13,14	7,14	21.2,26.2	5,8	9,12	16

UZYX2R   PowerPlex® Fusion 6C (PDF Format)

1					
15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X	10,11	22
13,14	7,14	21.2,26.2	5,8	9,12	16

W9K4MN   GlobalFiler™

1					
15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X,X	10,11	22
		21.2,26.2	5,8	9,12	16
-,-			-,-		

Z3KT6K   PowerPlex® Fusion 6C (HID Format)

1					
15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X,X	10,11	22
13,14	7,14	21.2,26.2	5,8	9,12	16

ZFQTUJ   GlobalFiler™ (HID Format)

1					
15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X,X	10,11	22
-	-	21.2,26.2	5,8	9,12	16
-	-	-	-		

WebCode	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 2 - STR Results

2JKAJH (FSA Format)

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
11,13	11,12	Not tested	7,9.3	10,11	15,18
10	Not tested	Not tested	Not tested		

3VXMKJ GlobalFiler™

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

AARRJF GlobalFiler™ (PDF Format)

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
N/A	N/A	26.2,28.2	7,9.3	10,11	15,18
10	N/A	N/A	2		

BAKY46 GlobalFiler™ (PDF Format)

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

CLVQ86 GlobalFiler™ (PDF Format)

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

CWCDG7 (PDF Format)

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

DX8JB6 GlobalFiler™ (PDF Format)

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

WebCode	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 2 - STR Results

EHMHT6   (FSA Format)

2	14,15	17,20	11,14	16,18	12,12	10,10
	10,14	12,13	19,21	8,12	8,12	18,18
	15,16	29,30	16,16	X,Y	9,12	21,24
	11,13	11,12	NT	7,9.3	10,11	15,18
	10	NT	NT	NT		

EYTMH3   GlobalFiler™ (PDF Format)

2	14,15	17,20	11,14	16,18	12,12	10,10
	10,14	12,13	19,21	8,12	8,12	18,18
	15,16	29,30	16,16	X,Y	9,12	21,24
	NT	NT	26.2,28.2	7,9.3	10,11	15,18
	10	NT	NT	2		

FAE266   PowerPlex® Fusion 6C (HID Format)

2	14,15	17,20	11,14	16,18	12,12	10,10
	10,14	12,13	19,21	8,12	8,12	18,18
	15,16	29,30	16,16	X,Y	9,12	21,24
	11,13	11,12	26.2,28.2	7,9.3	10,11	15,18
	10	19	18			

FPJDQ4   GlobalFiler™ (HID Format)

2	14,15	17,20	11,14	16,18	12	10
	10,14	12,13	19,21	8,12	8,12	18
	15,16	29,30	16	X,Y	9,12	21,24
			26.2,28.2	7,9.3	10,11	15,18
	10			2		

MU8RV3   GlobalFiler™ (PDF Format)

2	14,15	17,20	11,14	16,18	12	10
	10,14	12,13	19,21	8,12	8,12	18
	15,16	29,30	16	X,Y	9,12	21,24
			26.2,28.2	7,9.3	10,11	15,18
	10			2		

NMNLXV   (FSA Format)

2	14,15	17,20	11,14	16,18	12,12	10,10
	10,14	12,13	19,21	8,12	8,12	18,18
	15,16	29,30	16,16	X,Y	9,12	21,24
	11,13	11,12	NT	7,9.3	10,11	15,18
	10	NT	NT	NT		

NW4LZL   GlobalFiler™ (PDF Format)

2	14,15	17,20	11,14	16,18	12,12	10,10
	10,14	12,13	19,21	8,12	8,12	18,18
	15,16	29,30	16,16	X,Y	9,12	21,24
			26.2,28.2	7,9.3	10,11	15,18
	10			2		

WebCode	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 2 - STR Results

NY698W　　　(FSA Format)

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
11,13	11,12	not tested	7,9.3	10,11	15,18
10	not tested	not tested	not tested		

PAVKVU　　GlobalFiler™　(HID Format)

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
-	-	26.2,28.2	7,9.3	10,11	15,18
10	-	-	2		

PJBKWK　　GlobalFiler™　(HID Format)

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

Q2Z2UQ　　GlobalFiler™　(HID Format)

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

QNXBCR

2

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

QVU6AQ　　GlobalFiler™　(PDF Format)

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

TWJFXN　　　PowerPlex® Fusion 6C　(HID Format)

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
11,13	11,12	26.2,28.2	7,9.3	10,11	15,18
10	19	18			

WebCode	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 2 - STR Results

UZYX2R PowerPlex® Fusion 6C (PDF Format)

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
11,13	11,12	26.2,28.2	7,9.3	10,11	15,18
10	19	18			

W9K4MN GlobalFiler™

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

Z3KT6K PowerPlex® Fusion 6C (HID Format)

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
11,13	11,12	26.2,28.2	7,9.3	10,11	15,18
10	19	18			

ZFQTUJ GlobalFiler™ (HID Format)

2

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
-	-	26.2,28.2	7,9.3	10,11	15,18
10	-	-	2		

WebCode	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 3 - STR Results

2JKAJH   (FSA Format)

3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
11,13,14	7,11,12,14	not tested	5,7,8,9.3	9,10,11,12	15,16,18
10	not tested	not tested	not tested		

3major

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

3minor

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
13,14	7,14		5,8	9,12	16,16
not detected					

3VXMKJ   GlobalFiler™

3

14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
		21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10			2		

3major

14,15		11,14			10,10
	12,13		8,12		
		16,16			
			7,9.3		

3minor

16,NR		15,NR			8,12
	14,17		11,NR		
		14,17			
			5,8		

WebCode	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 3 - STR Results

AARRJF   GlobalFiler™ (PDF Format)

3

N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A		

3major

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
N/A	N/A	26.2,28.2	7,9.3	10,11	15,18
10	N/A	N/A	2		

3minor

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
N/A	N/A	21.2,26.2	5,8	9,12	16,16
NSD	N/A	N/A	NSD		

BAKY46   GlobalFiler™ (PDF Format)

3

	17,18,20		16,17,18		
				8,11,12	15,18
					21,22,24
					15,16,18
10			2		

3major

14,15		11,14		12	10,10
10,14	12,13	19,21	8,12		
15,16	29,30	16,16	X,Y	9,12	
		26.2,28.2	7,9.3	10,11	

3minor

16	25	15		11	8,12
10,11	14,17	17,18	11		
12,15	31.2	14,17	X,X	10,11	
		21.2	5,8	9,12	

CLVQ86   GlobalFiler™ (PDF Format)

3

14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
		21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10			2		

WebCode	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 3 - STR Results

CWCDG7   (PDF Format)

3	14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
	10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
	12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
	11,13,14	7,11,12,14		5,7,8,9.3	9,10,11,12	15,16,18
	10					

DX8JB6   GlobalFiler™ (PDF Format)

3	14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
	10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
	12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
			21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
	10			2		
3major	14,15	17,20	11,14	16,18	12,12	10,10
	10,14	12,13	19,21	8,12	8,12	18,18
	15,16	29,30	16,16	X,Y	9,12	21,24
			26.2,28.2	7,9.3	10,11	15,18
	10			2		
3minor	15,16	18,25	14,15	17,17	11,11	8,12
	10,11	14,17	17,18	11,12	11,11	15,15
	12,15	30,31.2	14,17	X,X	10,11	22,22
			21.2,26.2	5,8	9,12	16,16

EHMHT6   (FSA Format)

3major	14,15	17,20	11,14	16,18	12,12	10,10
	10,14	12,13	19,21	8,12	8,12	18,18
	15,16	29,30	16,16	X,Y	9,12	21,24
	11,13	11,12	NT	7,9.3	10,11	15,18
	10	NT	NT	NT		
3minor	15,16	18,25	14,15	17,17	11,11	8,12
	10,11	14,17	17,18	11,12	11,11	15,15
	12,15	30,31.2	14,17	X,X	10,11	22,22
	13,14	7,14	NT	5,8	9,12	16,16
	ND	NT	NT	NT		

EYTMH3   GlobalFiler™ (PDF Format)

3	14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
	10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
	12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
	NT	NT	21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
	10	NT	NT	2		

WebCode	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 3 - STR Results

FAE266 PowerPlex® Fusion 6C (HID Format)

14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
11,13,14	7,11,12,14	21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10	19	18			

FPJDQ4 GlobalFiler™ (HID Format)

14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
		21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10			2		

MU8RV3 GlobalFiler™ (PDF Format)

14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
		21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10			2		

NMNLXV (FSA Format)

14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
11,13,14	7,11,12,14	NT	5,7,8,9.3	9,10,11,12	15,16,18
10	NT	NT	NT		

3major

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

3minor

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
13,14	7,14	NT	5,8	9,12	16,16
ND	NT	NT	NT		

NW4LZL GlobalFiler™ (PDF Format)

14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
		21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10			2		

WebCode	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 3 - STR Results

NY698W (FSA Format)

3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
11,13,14	7,11,12,14	not tested	5,7,8,9.3	9,10,11,12	15,16,18
10	not tested	not tested	not tested		

3major

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

3minor

15,16	18,25	14,15	17,17	11,11	8,12
10,11	14,17	17,18	11,12	11,11	15,15
12,15	30,31.2	14,17	X,X	10,11	22,22
13,14	7,14		5,8	9,12	16,16
not detected					

PAVKVU GlobalFiler™ (HID Format)

3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
-	-				
	-	-			

3major

14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
-	-	26.2,28.2	7,9.3	10,11	15,18
10	-	-	2		

3minor

15,16	18,25	14,15	17	11	8,12
10,11	17	17,18	11,12	11	15
12,15	30,31.2	14,17	X,X	10,11	22
-	-	21.2,26.2	5,8	9,12	16
-	-	-	-		

PJBKWK GlobalFiler™ (HID Format)

3

14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
		21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10			2		

WebCode	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 3major - STR Results

Q2Z2UQ   GlobalFiler™ (HID Format)

3major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

3minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
15,16	18,25	14,15	17	11	8,12
10,11	14,17	17,18	11,12	11	15
12,15	30,31.2	14,17	X	10,11	22
		21.2,26.2	5,8	9,12	16

QNXBCR

3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
11,13,14	7,11,12,14		5,7,8,9.3	9,10,11,12	15,16,18
10					

QVU6AQ   GlobalFiler™ (PDF Format)

3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
		21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10			2		

TWJFXN   PowerPlex® Fusion 6C

3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
11,13,14	7,11,12,14	21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10	19	18			

UZYX2R   PowerPlex® Fusion 6C (PDF Format)

3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
11,13,14	7,11,12,14	21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10	19	18			

W9K4MN   GlobalFiler™

3

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
		21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10			2		

WebCode	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 3 - STR Results

Z3KT6K PowerPlex® Fusion 6C (HID Format)

3

14,15,16	17,18,20,25	11,14,15	16,17,18	11,12	8,10,12
10,11,14	12,13,14,17	17,18,19,21	8,11,12	8,11,12	15,18
12,15,16	29,30,31.2	14,16,17	X,Y	9,10,11,12	21,22,24
11,13,14	7,11,12,14	21.2,26.2,28.2	5,7,8,9.3	9,10,11,12	15,16,18
10	19	18			

ZFQTUJ GlobalFiler™ (HID Format)

3

-	-				
	-	-			

3major					
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
-	-	26.2,28.2	7,9.3	10,11	15,18
10	-	-	2		

3minor					
15,16	18,25	14,15	17	11	8,12
10,11	17	17,18	11,12	11	15
12,15	30,31.2	14,17	X,X	10,11	22
-	-	21.2,26.2	5,8	9,12	16
-	-	-	-		

WebCode	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 4 - STR Results

2JKAJH (FSA Format)

4

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,18,20,25	11,14	16,18	12	9,10
D8S1179	**D10S1248**	**D12S391**	**D13S317**	**D16S539**	**D18S51**
10,13,14	12,13	19,20,21	8,12	8,9,12	18
D19S433	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**
15,16	29,30	16	X,Y	9,12	20,21,24
Penta D	**Penta E**	**SE33**	**TH01**	**TPOX**	**vWA**
11,13	11,12	not tested	7,9.3	8,10,11	14,15,18
DYS391	**DYS570**	**DYS576**	**Y Indel**		
10	not tested	not tested	not tested		

4major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12,12	10,10
D8S1179	**D10S1248**	**D12S391**	**D13S317**	**D16S539**	**D18S51**
10,14	12,13	19,21	8,12	8,12	18,18
D19S433	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**
15,16	29,30	16,inconclusive	X,Y	9,12	21,24
Penta D	**Penta E**	**SE33**	**TH01**	**TPOX**	**vWA**
11,13	11,12		7,9.3	10,11	15,18
DYS391	**DYS570**	**DYS576**	**Y Indel**		
10					

4minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
not detected	18,25	not detected	not detected	not detected	9,inconclusive
D8S1179	**D10S1248**	**D12S391**	**D13S317**	**D16S539**	**D18S51**
13,inconclusive	not detected	20,inconclusive	not detected	9,inconclusive	not detected
D19S433	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**
not detected	not detected	not detected	not detected	not detected	20,inconclusive
Penta D	**Penta E**	**SE33**	**TH01**	**TPOX**	**vWA**
not detected	not detected		not detected	8,inconclusive	14,inconclusive
DYS391	**DYS570**	**DYS576**	**Y Indel**		
not detected					

3VXMKJ GlobalFiler™

4

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,14,15	17,18,20,25	11,14	16,18	11,12	10,10
D8S1179	**D10S1248**	**D12S391**	**D13S317**	**D16S539**	**D18S51**
10,13,14	12,13	19,20,21	8,12	8,9,12	16,18
D19S433	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**
13,15,16	29,30,32.2	15,16	X,Y	9,12	20,21,24
Penta D	**Penta E**	**SE33**	**TH01**	**TPOX**	**vWA**
		26.2,28.2	7,9.3	8,10,11,12	14,15,16,18
DYS391	**DYS570**	**DYS576**	**Y Indel**		
10			2		

4major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12,12	10,10
D8S1179	**D10S1248**	**D12S391**	**D13S317**	**D16S539**	**D18S51**
10,14	12,13	19,21	8,12	8,12	18,18
D19S433	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**
15,16	29,30	16,16		9,12	21,24
Penta D	**Penta E**	**SE33**	**TH01**	**TPOX**	**vWA**
		26.2,28.2	7,9.3	10,11	15,18
DYS391	**DYS570**	**DYS576**	**Y Indel**		
10			2		

4minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,NR	18,25			11,NR	
D8S1179	**D10S1248**	**D12S391**	**D13S317**	**D16S539**	**D18S51**
13,NR		20,NR		9,NR	16,NR
D19S433	**D21S11**	**D22S1045**	**Amelogenin**	**CSF1PO**	**FGA**
13,NR	32.2,NR	15,NR			20,NR
Penta D	**Penta E**	**SE33**	**TH01**	**TPOX**	**vWA**
				8,12	14,16

WebCode	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 4 - STR Results

AARRJF   GlobalFiler™ (PDF Format)

4					
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A		

4major					
14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
N/A	N/A	26.2,28.2	7,9.3	10,11	15,18
10	N/A	N/A	2		

4minor					
12	18,25	NSD	NSD	11	NSD
13	NSD	20	NSD	9	16
13	32.2	15	NSD	NSD	20
N/A	N/A	NSD	NSD	8,12	14,16
NSD	N/A	N/A	NSD		

BAKY46   GlobalFiler™ (PDF Format)

4					
		11,14	16,18		10,10
	12,13		8,12		
			X,Y	9,12	
		26.2,28.2	7,9.3		
10			2		

4major					
14,15	17,20			12,12	
10,14		19,21		8,12	18,18
15,16	29,30	16,16			21,24
				10,11	15,18

4minor					
12	18,25			11	
13		20		9	16
13	32.2	15			20
				8,12	14,16

CLVQ86   GlobalFiler™ (PDF Format)

4					
12,14,15	17,18,20,25	11,14	16,18	12,12	10,11
10,13,14	12,13,15	19,20,21	8,9,12,14	8,9,12	14,16,18
13,15,16	29,30,32.2	15,16	X,Y	9,12	20,21,24
		26.2,27.2,28.2	7,9.3	8,10,11,12	14,15,16,18
10,11			2		

4major					
14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

WebCode	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 4 - STR Results

CWCDG7   (PDF Format)

4	12,14,15,17.3	17,18,20,25	11,14	16,18	12	10

12,14,15,17.3	17,18,20,25	11,14	16,18	12	10
10,14	12,13,15	19,21	8,9,12,14	8,9,12	14,16,18
13,15,16	29,30,32.2	16	X,Y	9,10,12	20,21,24
11,13	11,12,15,20		7,9.3	8,10,11	14,15,16,18
10,11					

DX8JB6   GlobalFiler™   (PDF Format)

4

12,14,15	17,18,20,25	11,14	16,18	11,12	10
10,13,14	12,13	19,20,21	8,12	8,9,12	16,18
13,15,16	29,30,32.2	15,16	X,Y	9,12	20,21,24
		26.2,28.2	7,9.3	8,10,11,12	14,15,16,18
10			2		

4major

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

EHMHT6   (FSA Format)

4major

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,inc	X,Y	9,12	21,24
11,13	11,12	NT	7,9.3	10,11	15,18
10	NT	NT	NT		

4minor

ND	18,25	ND	ND	ND	9,inc
13,inc	ND	20,inc	ND	9,inc	ND
ND	ND	ND	ND	ND	20,inc
ND	ND	NT	ND	8,inc	14,inc
ND	NT	NT	NT		

WebCode	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 4 - STR Results

EYTMH3   GlobalFiler™ (PDF Format)

4

NT	NT				
	NT	NT			

4major

14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

4minor

12,X	18,25			11,X	
13,X		20,X		9,X	16,X
13,15	32.2,X	15,X	X,Y		20,X
				8,12	14,16

FAE266   PowerPlex® Fusion 6C (HID Format)

4

12,14,15,17.3	17,18,20,25	11,12,14	16,18	12,12	9,10
10,13,14	12,13,15	19,20,21	8,9,12,14	8,9,12	14,16,18
13,15,16	29,30,32.2	15,16	X,Y	9,10,12	20,21,24
11,13	11,12,15,20	16,17,26.2,27.2,28.2,29.2	7,9.3	8,10,11,12	14,15,16,18
10,11	13,19	18,21			

4major

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
11,13	11,12	26.2,28.2	7,9.3	10,11	15,18
10	19	18			

FPJDQ4   GlobalFiler™ (HID Format)

4

14,15	17,18,20,25	11,14	16,18	11,12	10
10,13,14	12,13	19,20,21	8,12	8,9,12	18
13,15,16	29,30,32.2	15,16	X,Y	9,12	20,21,24
		26.2,28.2	7,9.3	8,10,11	14,15,18
10			2		

MU8RV3   GlobalFiler™ (PDF Format)

4

12,14,15	17,18,20,25	11,14	16,18	11,12	10
10,13,14	12,13	19,20,21	8,12	8,9,12	16,18
13,15,16	29,30,32.2	15,16	X,Y	9,12	20,21,24
		26.2,28.2	7,9.3	8,10,11,12	14,15,16,18
10,11			2		

WebCode	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 4 - STR Results

NMNLXV (FSA Format)

4

14,15	17,18,20,25	11,14	16,18	12	10
10,13,14	12,13	19,20,21	8,12	8,9,12	18
15,16	29,30	16	X,Y	9,12	20,21,24
11,13	11,12	NT	7,9.3	8,10,11	14,15,18
10	NT	NT	NT		

4major

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,inc	X,Y	9,12	21,24
11,13	11,12	NT	7,9.3	10,11	15,18
10	NT	NT	NT		

4minor

ND	18,25	ND	ND	ND	9,inc
13,inc	ND	20,inc	ND	9,inc	ND
ND	ND	ND	ND	ND	20,inc
ND	ND	NT	ND	8,inc	14,inc
ND	NT	NT	NT		

NW4LZL GlobalFiler™ (PDF Format)

4major

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

4minor

12	18,25			11	
13		20		9	16
13	32.2	15			20
				8,12	14,16

NY698W (FSA Format)

4

14,15	17,18,20,25	11,14	16,18	12	9,10
10,13,14	12,13	19,20,21	8,12	8,9,12	18
15,16	29,30	16	X,Y	9,12	20,21,24
11,13	11,12	not tested	7,9.3	8,10,11	14,15,18
10	not tested	not tested	not tested		

4major

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

4minor

not detected	18,25	not detected	not detected	not detected	9,inconclusive
13,inconclusive	not detected	20,inconclusive	not detected	9,inconclusive	not detected
not detected	not detected	not detected	not detected	not detected	20,inconclusive
not detected	not detected		not detected	8,inconclusive	14,inconclusive
not detected					

WebCode	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 4 - STR Results

PAVKVU   GlobalFiler™ (HID Format)

4

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15		11,14	16,18		10
	12,13		8,12		18
			X,Y	9,12	
-	-	26.2,28.2	7,9.3		
10	-	-	2		

4major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	17,20			12	
10		19,21		8,12	
15,16	29,30	16			21,24
-	-			10,11	15,18
	-	-			

4minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	18,25			11	
13,14		20,21		8,9	
13,15	29,32.2	15			20,21
-	-			8,10	14,15
	-	-			

PJBKWK   GlobalFiler™ (HID Format)

4major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

4minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,17.3	18,25			11	
13	15	20	9	9	14,16
13	32.2	15			20
		27.2		8,12	14,16

Q2Z2UQ   GlobalFiler™ (HID Format)

4major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

WebCode 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 4major - STR Results

QNXBCR

4major

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

4minor

(12,17.3)	(18,25)				
(13)	(15)	(20)	(9,14)	9	(14,16)
(13)	(32.2)			(10)	(20)
	(15,20)			(8,12)	(14,16)
11					

QVU6AQ   GlobalFiler™ (PDF Format)

4major

14,15	17,20	11,14	16,18	12,12	10,10
10,14	12,13	19,21	8,12	8,12	18,18
15,16	29,30	16,16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

4minor

12	18,25			11	
13		20		9	16
13	32.2	15			20
				8,12	14,16

TWJFXN   PowerPlex® Fusion 6C (HID Format)

4

12,14,15	17,18,20,25	11,14	16,18	12	9,10
10,13,14	12,13,15	19,20,21	8,9,12,14	8,9,12	14,16,18
13,15,16	29,30,32.2	15,16	X,Y	9,10,12	20,21,24
11,13	11,12,15,20	26.2,27.2,28.2	7,9.3	8,10,11,12	14,15,16,18
10,11	13,19	18,21			

UZYX2R   PowerPlex® Fusion 6C (PDF Format)

4

12,14,15	17,18,20,25	11,14	16,18	12	9,10
10,13,14	12,13,15	19,20,21	8,9,12,14	8,9,12	14,16,18
13,15,16	29,30,32.2	15,16	X,Y	9,10,12	20,21,24
11,13	11,12,15,20	17,26.2,27.2,28.2	7,9.3	8,10,11,12	14,15,16,18
10,11	13,19	18,21			

WebCode	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 4major - STR Results

W9K4MN   GlobalFiler™

4major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13	19,21	8,12	8,12	18
15,16	29,30	16	X,Y	9,12	21,24
		26.2,28.2	7,9.3	10,11	15,18
10			2		

4minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818/CSF1PO	D7S820/FGA
	18,25			11	
13		20		9	16
13	32.2	15			20
				8	14

Z3KT6K   PowerPlex® Fusion 6C (HID Format)

4

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
12,14,15	17,18,20,25	11,14	16,18	12	9,10
10,13,14	12,13,15	19,20,21	8,9,12,14	8,9,12	14,16,18
13,15,16	29,30,32.2	15,16	X,Y	9,10,12	20,21,24
11,13	11,12,15,20	17,26.2,27.2,28.2	7,9.3	8,10,11,12	14,15,16,18
10,11	13,19	18,21			

4major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15	17,20	11,14	16,18	12	10
10,14	12,13		8,12	8,12	18
15,16	29,30		X,Y	9,12	
11,13	11,12	26.2,28.2	7,9.3	10,11	15,18
10	19	18			

4minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818/CSF1PO	D7S820/FGA
12	18,25				9
13	15		9,14	9	14,16
13	32.2			10	
	15,20	17,27.2		8,12	14,16
11	13	21			

ZFQTUJ   GlobalFiler™ (HID Format)

4

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
14,15		11,14	16,18		10
	12,13		8,12		18
			X,Y	9,12	
-	-	26.2,28.2	7,9.3		
10	-	-	2		

4major

D1S1656	D2S1338	D2S441	D3S1358	D5S818	D7S820
	17,20			12	
10		19,21		8,12	
15,16	29,30	16			21,24
-	-			10,11	15,18
		-	-		

4minor

D1S1656	D2S1338	D2S441	D3S1358	D5S818/CSF1PO	D7S820/FGA
	18,25			11	
13,14		20,21		8,9	
13,15	29,32.2	15			20,21
-	-			8,10	14,15
		-	-		

YSTR Results

TABLE 3

WebCode	Amplification Kits (File Format)							
Item	**DYS19**	**DYS385**	**DYS389_I**	**DYS389_II**	**DYS390**	**DYS391**	**DYS392**	**DYS393**
	DYS437	**DYS438**	**DYS439**	**DYS448**	**DYS456**	**DYS458**	**DYS481**	**DYS533**
	DYS549	**DYS570**	**DYS576**	**DYS635**	**DYS643**	**Y GATA H4**		

Item 1 - YSTR Results

AARRJF   Yfiler® (PDF Format)

1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A		

TABLE 3

WebCode Item	Amplification Kits (File Format)							
	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		

Item 2 - YSTR Results

3VXMKJ Yfiler®

2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		

AARRJF Yfiler® (PDF Format)

2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	N/A	N/A
	N/A	N/A	N/A	21	N/A	11		

BAKY46 PowerPlex® Y23 (PDF Format)

2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

CLVQ86 PowerPlex® Y23 (PDF Format)

2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

CWCDG7 Yfiler®, PowerPlex® Y23 (PDF Format)

2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

DX8JB6 Yfiler® (PDF Format)

2	15	14,16	12	29	22		11	15
	16	10	11	21	17	16		
				21		11		

EYTMH3 PowerPlex® Y23 (PDF Format)

2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

FPJDQ4 Yfiler® (HID Format)

2	15	14,16	12	29	22	10	11	15
	16	10		21	17	16		
				21		11		

TABLE 3

WebCode Item	Amplification Kits (File Format)							
	DYS19 / DYS437 / DYS549	DYS385 / DYS438 / DYS570	DYS389_I / DYS439 / DYS576	DYS389_II / DYS448 / DYS635	DYS390 / DYS456 / DYS643	DYS391 / DYS458 / Y GATA H4	DYS392 / DYS481	DYS393 / DYS533

Item 2 - YSTR Results

MU8RV3 — PowerPlex® Y23 (PDF Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

NW4LZL — Yfiler® (PDF Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		

PAVKVU — Yfiler® (FSA Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	-	-
	-	-	-	21	-	11		

PJBKWK — Yfiler® (FSA Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		

QNXBCR — PowerPlex® Y23

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

QVU6AQ — PowerPlex® Y23 (PDF Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

TWJFXN — PowerPlex® Y23 (HID Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

ZFQTUJ — Yfiler® (FSA Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
2	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	-	-
	-	-	-	21	-	11		

TABLE 3

WebCode Amplification Kits (File Format)							
Item DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		

Item 3 - YSTR Results

3VXMKJ — Yfiler®

DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
15	14,16	12	29	22	10	11	15
16	10	11	21	17	16		
			21		11		

AARRJF — Yfiler® (PDF Format)

DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
15	14,16	12	29	22	10	11	15
16	10	11	21	17	16	N/A	N/A
N/A	N/A	N/A	21	N/A	11		

3major

DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A		

3minor

DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A		

BAKY46 — PowerPlex® Y23 (PDF Format)

DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
15	14,16	12	29	22	10	11	15
16	10	11	21	17	16	22	9
14	19	18	21	11	11		

CLVQ86 — PowerPlex® Y23 (PDF Format)

DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
15	14,16	12	29	22	10	11	15
16	10	11	21	17	16	22	9
14	19	18	21	11	11		

CWCDG7 — Yfiler®, PowerPlex® Y23 (PDF Format)

DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
15	14,16	12	29	22	10	11	15
16	10	11	21	17	16	22	9
14	19	18	21	11	11		

DX8JB6 — Yfiler® (PDF Format)

DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
15	14,16	12	29	22		11	15
16	10	11	21	17	16		
			21		11		

EYTMH3 — PowerPlex® Y23 (PDF Format)

DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
15	14,16	12	29	22	10	11	15
16	10	11	21	17	16	22	9
14	19	18	21	11	11		

TABLE 3

WebCode / Item	Amplification Kits (File Format)							
	DYS19 / DYS437 / DYS549	DYS385 / DYS438 / DYS570	DYS389_I / DYS439 / DYS576	DYS389_II / DYS448 / DYS635	DYS390 / DYS456 / DYS643	DYS391 / DYS458 / Y GATA H4	DYS392 / DYS481	DYS393 / DYS533

Item 3 - YSTR Results

FPJDQ4 — Yfiler® (HID Format)

	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		

MU8RV3 — PowerPlex® Y23 (PDF Format)

3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

NW4LZL — Yfiler® (PDF Format)

3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		

PAVKVU — Yfiler® (FSA Format)

3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	-	-
	-	-	-	21	-	11		
3major	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-		
3minor	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-		

PJBKWK — Yfiler® (FSA Format)

3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		

QNXBCR — PowerPlex® Y23

3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

QVU6AQ — PowerPlex® Y23 (PDF Format)

3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

TABLE 3

WebCode Item	Amplification Kits (File Format)							
	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		

Item 3 - YSTR Results

WebCode / Item								
TWJFXN	PowerPlex® Y23 (HID Format)							
3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		
ZFQTUJ	Yfiler® (FSA Format)							
3	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	-	-
	-	-	-	21	-	11		
3major	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-		
3minor	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-		

TABLE 3

WebCode / Item	DYS19 / DYS437 / DYS549	DYS385 / DYS438 / DYS570	DYS389_I / DYS439 / DYS576	DYS389_II / DYS448 / DYS635	DYS390 / DYS456 / DYS643	DYS391 / DYS458 / Y GATA H4	DYS392 / DYS481	DYS393 / DYS533

Item 4 - YSTR Results

3VXMKJ — Yfiler®

	DYS19/437/549	DYS385/438/570	DYS389_I/439/576	DYS389_II/448/635	DYS390/456/643	DYS391/458/Y GATA H4	DYS392/481	DYS393/533
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11	19,21	16,17	16,18		
				21,23		11,12		
4major	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		
4minor	14	11,13	13		24	11	13	13
	15	12		19	16	18		
				23		12		

AARRJF — Yfiler® (PDF Format)

	DYS19/437/549	DYS385/438/570	DYS389_I/439/576	DYS389_II/448/635	DYS390/456/643	DYS391/458/Y GATA H4	DYS392/481	DYS393/533
4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A		
4major	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	N/A	N/A
	N/A	N/A	N/A	21	N/A	11		
4minor	14	11,13	13	NSD	24	11	13	13
	15	12	NSD	19	16	18	N/A	N/A
	N/A	N/A	N/A	23	N/A	12		

BAKY46 — PowerPlex® Y23 (PDF Format)

	DYS19/437/549	DYS385/438/570	DYS389_I/439/576	DYS389_II/448/635	DYS390/456/643	DYS391/458/Y GATA H4	DYS392/481	DYS393/533
4				29				
						11		
4major	15	14,16	12		22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11			
4minor	14	11,13	13		24	11	13	13
	15	12	12	19	16	18	21	12
	13	13	21	23	8	12		

CLVQ86 — PowerPlex® Y23 (PDF Format)

	DYS19/437/549	DYS385/438/570	DYS389_I/439/576	DYS389_II/448/635	DYS390/456/643	DYS391/458/Y GATA H4	DYS392/481	DYS393/533
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11,12	19,21	16,17	16,18	21,22	9,12
	13,14	13,19	18,21	21,23	8,11	11,12		
4major	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		

TABLE 3

WebCode / Item	Amplification Kits (File Format)							
	DYS19 / DYS437 / DYS549	DYS385 / DYS438 / DYS570	DYS389_I / DYS439 / DYS576	DYS389_II / DYS448 / DYS635	DYS390 / DYS456 / DYS643	DYS391 / DYS458 / Y GATA H4	DYS392 / DYS481	DYS393 / DYS533

Item 4 - YSTR Results

CWCDG7 — Yfiler®, PowerPlex® Y23 (PDF Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11	19,21	16,17	16,18	21,22	9,12
	13,14	13,19	18,21	21,23	8,11	11,12		

DX8JB6 — Yfiler® (PDF Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11	19,21	16,17	16,18		
				21,23		11,12		
4major	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		

EYTMH3 — PowerPlex® Y23 (PDF Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4major	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		
4minor	14	11,13	13		24	11	13	13
	15	12	12	19	16	18	21	12
	13	13	21	23	8	12		

FPJDQ4 — Yfiler® (HID Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11	19,21	16,17	16,18		
				21,23		11,12		

MU8RV3 — PowerPlex® Y23 (PDF Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11,12	19,21	16,17	16,18	21,22	9,12
	13,14	13,19	18,21	21,23	8,11	11,12		

NW4LZL — Yfiler® (PDF Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4major	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		
4minor	14	11,13	13		24	11	13	13
	15	12		19	16	18		
				23		12		

TABLE 3

WebCode Item	Amplification Kits (File Format)							
	DYS19 DYS437 DYS549	DYS385 DYS438 DYS570	DYS389_I DYS439 DYS576	DYS389_II DYS448 DYS635	DYS390 DYS456 DYS643	DYS391 DYS458 Y GATA H4	DYS392 DYS481	DYS393 DYS533

Item 4 - YSTR Results

PAVKVU   Yfiler® (FSA Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11	19,21	16,17	16,18	-	-
	-	-	-	21,23	-	11,12		
4major	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-		
4minor	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
	-	-	-	-	-	-		

PJBKWK   Yfiler® (FSA Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4major	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16		
				21		11		
4minor	14	11,13	13		24	11	13	13
	15	12		19	16	18		
				23		12		

QNXBCR   PowerPlex® Y23

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4major	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		
4minor	(14)	(11,13)	(13)		(24)	(11)	(13)	(13)
	(15)	(12)	(12)	(19)	(16)	(18)	(21)	(12)
	(13)	(13)	(21)	(23)	(8)	(12)		

QVU6AQ   PowerPlex® Y23 (PDF Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4major	15	14,16	12	29	22	10	11	15
	16	10	11	21	17	16	22	9
	14	19	18	21	11	11		
4minor	14	11,13	13		24	11	13	13
	15	12	12	19	16	18	21	12
	13	13	21	23	8	12		

TWJFXN   PowerPlex® Y23 (HID Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11,12	19,21	16,17	16,18	21,22	9,12
	13,14	13,19	18,21	21,23	8,11	11,12		

TABLE 3

WebCode Item	Amplification Kits (File Format)						
	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
	DYS437	DYS438	DYS439	DYS448	DYS456	DYS458	DYS481	DYS533
	DYS549	DYS570	DYS576	DYS635	DYS643	Y GATA H4		

Item 4 - YSTR Results

ZFQTUJ   Yfiler® (FSA Format)

Item	DYS19	DYS385	DYS389_I	DYS389_II	DYS390	DYS391	DYS392	DYS393
4	14,15	11,13,14,16	12,13	29	22,24	10,11	11,13	13,15
	15,16	10,12	11	19,21	16,17	16,18	-	-
	-	-	-	21,23	-	11,12		
4major							-	-
	-	-	-	-				
4minor							-	-
	-	-	-	-				

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
2JKAJH	2	Included	Included	2	Excluded	Included
3VXMKJ	2	Included	Included	2	Excluded	Included
AARRJF	2	Included	Included	3*	Inconclusive / Uninterpretable	Included
BAKY46	2	Included	Included	At least 2.	Excluded	Included
CLVQ86	2	Included	Included		Excluded	Included
CWCDG7	at least 2	Included	Included	At least 2	Excluded	Included
DX8JB6	2	Included	Included	2	Excluded	Included
EHMHT6	2	Included	Included	2	Excluded	Included
EYTMH3	2	Included	Included	2	Excluded	Included
FAE266	2	Included	Included	2 and a trace	Inconclusive / Uninterpretable	Included
FPJDQ4	2	Included	Included	2	Excluded	Included
MU8RV3	2	Included	Included	2	Excluded	Included
NMNLXV	2	Included	Included	2	Excluded	Included
NW4LZL	2	Included	Included	2	Excluded	Included
NY698W	2	Included	Included	2	Excluded	Included
PAVKVU	2	Included	Included	2	Excluded	Included
PJBKWK	2	Included	Included	2	Excluded	Included
Q2Z2UQ	2	Included	Included		Excluded	Included
QNXBCR	2	Included	Included	2	Excluded	Included
QVU6AQ	Two	Included	Included	two	Excluded	Included

TABLE 4

WebCode	# of Contributors	Item 3 Conclusion Item 1	Item 2	# of Contributors	Item 4 Conclusion Item 1	Item 2
TWJFXN	2	Included	Included	2	Excluded	Included
UZYX2R	2	Included	Included	2	Excluded	Included
W9K4MN	2	Included	Included	Two or more	Inconclusive / Uninterpretable	Included
Z3KT6K	2	Included	Included	2	Excluded	Included
ZFQTUJ	2	Included	Included	2	Excluded	Included

Conclusions Response Summary				**Participants reporting conclusions: 25**	

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

Responses		Item 3 Item 1	Item 2	Item 4 Item 1	Item 2
	Included	**25**	**25**	**0**	**25**
	Excluded	**0**	**0**	**22**	**0**
	Inconclusive	**0**	**0**	**3**	**0**
	No Response	**0**	**0**	**0**	**0**
	Total	**25**	**25**	**25**	**25**

Statistical Analysis for Item 3
TABLE 5

WebCode	Item 3 Methods & Results
2JKAJH	**Method(s)**: Random Match Probability **Stats Analysis:** A Mixture of human DNA profiles was identified in Item 3 that has been interpreted as a mixture of 2 people. Assuming this is a mixture of the victim (Item 1) and one other individual, a male DNA profile was identified from which the suspect (Item 2)cannot be excluded (is included). The expected frequency of occurrence for this profile was calculated for the African American, Caucasian, and Hispanic population groups and was found to be no more common than approximately 1 in 1.4 nonillion unrelated individuals.
3VXMKJ	**Method(s)**: Likelihood Ratio **Stats Analysis:** The LR has been calculated using a PowerPlex 21 calculator as no Globalfiler calculation sheet was available for use. Therefore only overlapping loci were utilized for the LR calculation. The suspect cannot be excluded as a source of the major component. The evidence is at least 20,000 times more likely if the major component of the DNA profile obtained originated from the suspect than if it originated from another unknown, unrelated individual selected at random from the [Country] Caucasian sub-population. In my opinion, this finding when considered in isolation from other information provides strong support for the proposition that the major component of the DNA profile obtained came from the suspect.
AARRJF	**Method(s)**: [Participant did not report a Method] **Stats Analysis:** I am a forensic consultant that reviews DNA case files that are 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 do not calculate population statistics as part of my case reviews. I accept that the population calculations are correct. N/A = Not Applicable, NSD = No Size Data
BAKY46	**Method(s)**: Random Match Probability **Stats Analysis:** RESULT CONDITIONED ON FEMALE PROFILE. THE PROBABILITY OF OBTAINING A MATCHING MALE PROFILE IF THE MALE DNA WAS FROM SOMEONE UNRELATED TO THE SUSPECT IS LESS THAN 1 IN 1 BILLION (THOUSAND MILLION). NO STATS CALCULATED FOR THE Y-STR RESULT.
CLVQ86	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis:** The probability of selecting an unrelated individual at random who cannot be excluded/ that can be included as one of the possible source of the DNA profile obtained from this item are approximately: 1 in 26 trillion *SE33 were not used for this stats.
CWCDG7	**Method(s)**: Likelihood Ratio **Stats Analysis:** Total Likelihood Ratio is 1.58766e+26
DX8JB6	**Method(s)**: [Participant did not report a Method] **Stats Analysis:** We can't perform the calculation because our software isn't parameterized, we don't use the kit GlobalFiler in routine.
EHMHT6	**Method(s)**: Random Match Probability **Stats Analysis:** A mixture of human DNA profiles was identified in Item 3 that was interpreted as a mixture of two people. Assuming this profile is a mixture of the female victim and one other individual, a male DNA profile was identified from which the suspect (Item 2) cannot be excluded (is included). The expected frequency of occurrence for this profile was calculated for the African American, Caucasian, and Hispanic population groups and was found to be no more common than approximately 1 in 1.4 nonillion unrelated individuals.

TABLE 5

WebCode	Item 3 Methods & Results
EYTMH3	**Method(s)**: [Participant did not report a Method] **Stats Analysis:** No statistical calculations performed.
FAE266	**Method(s)**: Likelihood Ratio **Stats Analysis:** A mixed DNA typing profile was obtained from Item 3, the epithelial fraction from the victim's vaginal swab. This DNA profile is consistent with the combined known profiles from the victim (Item #1) and the suspect (Item #2). It is 82 Septillion times more likely that the observed DNA profile originated from the victim and the suspect than it having originated from the victim and an unknown indivudual selected at random from the U.S. Population.
FPJDQ4	**Method(s)**: Likelihood Ratio **Stats Analysis:** The probability of a randomly selected unrelated individual having a DNA profile which matched with Item 2 that is consistent with being one of the contributor (given that the known contributor is represented by Item 1) is approximately (i) 1 in 700 quadrillion as calculated based on the [Country] [Nationality] DNA population database. (ii) 1 in 590 quadrillion as calculated based on the [Country] [Nationality] DNA population database. (iii) 1 in 670 quadrillion as calculated based on the [Country] [Nationality] DNA population database.
MU8RV3	**Method(s)**: [Participant did not report a Method]
NMNLXV	**Method(s)**: Random Match Probability **Stats Analysis:** Assuming this is a mixture of the female victim and one other individual, a male DNA profile was identified in item 3 from which the DNA profile of the male suspect cannot be excluded (is included). The expected frequency of occurrence for this DNA profile was calculated for the African American, Caucasian, and Hispanic population groups and was found to be no more common than approximately 1 in 1.4 nonillion unrelated individuals.
NW4LZL	**Method(s)**: Likelihood Ratio **Stats Analysis:** The DNA profile obtained is 100 billion times more likely if it originated from the victim and the suspect than if it originated from the victim and another unknown, unrelated individual chosen at random from the [Country] Caucasian population. Y STR: no matches in 156,181 haplotypes
NY698W	**Method(s)**: Random Match Probability **Stats Analysis:** A mixture of human DNA profiles was identified in the non-sperm fraction of the vaginal swabs (Item 3) that was interpreted as a mixture of two people. Assuming this a mixture of the victim (Item 1)and one other individual, a male DNA profile was identified from which the suspect (Item 2) cannot be excluded (is included). The expected frequency of occurrence for this profile was calculated at 23 loci for the African American, Caucasian and Hispanic population groups and was found to be no more common than approximately 1 in 1.4 nonillion unrelated individuals.
PAVKVU	**Method(s)**: Likelihood Ratio **Stats Analysis:** The probability of a randomly selected unrelated individual having a DNA profile that is consistent with "Item 2" and being one of the contributors to this mixed DNA profile(given that the known contributor is represented by "Item 1") is approximately: a) 1 in 2.8 octillion (2.8 x 10^27), as calculated based on the [Country] [Nationality] population database. b) 1 in 56 octillion (56 x 10^27), as calculated based on the [Country] [Nationality] population database. c) 1 in 26 octillion (26 x 10^27), as calculated based on the [Country] [Nationality] population database.

TABLE 5

WebCode	Item 3 Methods & Results
PJBKWK	**Method(s)**: Random Match Probability **Stats Analysis:** The DNA profile obtained from Item 3 is a mixture of DNA interpreted as a mixture of two individuals. Assuming this is a mixture of DNA from the victim and one other individual, the suspect cannot be excluded as a possible contributor to the additional DNA profile. This additional DNA profile is expected to occur in approximately 1 in 425 octillion in the Caucasian population, in approximately 1 in 38 nonillion in the African American population and in approximately 1 in 339 octillion in the Hispanic population among unrelated individuals. The haplotype profile obtained from Item 3 is single source. The suspect cannot be excluded as a possible contributor to this haplotype profile. This haplotype profile is expected to occur in approximately 1 in 2488 unrelated males in the Caucasian population, in approximately 1 in 2083 unrelated males in the African American population and in approximately 1 in 1592 unrelated males in the Hispanic population. Barring mutation, any male related to the suspect through paternal lineage would also exhibit this haplotype profile.
Q2Z2UQ	**Method(s)**: [Participant did not report a Method]
QNXBCR	**Method(s)**: Likelihood Ratio **Stats Analysis:** FUSION 5c: The software validated at this laboratory (Cellmark)for probabilistic genotyping (STRmix and LikeLTD) is NOT validated for Global Filer or Fusion 5C / 6C. However, assuming the alternatives being considered are victim + suspect versus victim + unknown then I would expect a likelihood ratio in excess of one billion in favour of the first alternative over the second (one billion being the upper limit used to report likelihood ratios and match probabilities in the UK)(NB: One billion is one thousand million). Given this statistical evaluation, a statistical evaluation of the less discriminating Y-STR results has not been conducted.
QVU6AQ	**Method(s)**: [Participant did not report a Method] **Stats Analysis:** No statistics performed. For databasing purposes only
TWJFXN	**Method(s)**: Likelihood Ratio **Stats Analysis:** The observed mixture profile is approximately 1.12×10^{28}, 3.98×10^{26}, and 5.49×10^{26} times more likely to occur under the scenario that it is a mixture of DNA from the victim and the suspect, as opposed to the scenario that it originated from a mixture of DNA from the victim, and an unrelated unknown individual, in the African American, Caucasian, and Hispanic population, respectively.
UZYX2R	**Method(s)**: Combined Probability of Exclusion/Inclusion **Stats Analysis:** African American Profile Probability of Inclusion - 1 in 6,250,000,000,000,000. Caucasian Profile Probability of Inclusion - 1 in 571,800,000,000,000
W9K4MN	**Method(s)**: Random Match Probability **Stats Analysis:** Assuming the presence of the victim's DNA (Item 1), the deduced profile is consistent with the DNA profile of the suspect (Item 2). Using 21 of 21 loci, the probabilities of selecting an unrelated individual at random having a DNA profile consistent with the deduced DNA profile obtained from Item 3 are approximately: • 1 in 424 Octillion Caucasians • 1 in 22.8 Nonillion African Americans • 1 in 339 Octillion Hispanics
Z3KT6K	**Method(s)**: Likelihood Ratio **Stats Analysis:** The probability of selecting an unrelated individual at random having DNA STR alleles for the autosomal loci consistent with the non-victim profile detected in Submission 3 is approximately 1 in 20 octillion [2E28] in the Caucasian population and 1 in 600 octillion [6E29] in the African American population.

TABLE 5

WebCode	Item 3 Methods & Results
ZFQTUJ	**Method(s)**: Likelihood Ratio
	Stats Analysis: The probability of a randomly selected unrelated individual having a DNA profile that is consistent with "Item 2" and being one of the contributors to this mixed DNA profile (given that the known contributor is represented by "Item 1") is approximately: a)1 in 2.8 octillion (2.8 x 10^27) as calculated based on [Country] [Nationality] population database. b)1 in 56 octillion (56 x 10^27)as calculated based on [Country] [Nationality] population database. c)1 in 26 octillion (26 x 10^27)as calculated based on [Country] [Nationality] population database.

Statistical Analysis for Item 4
TABLE 6

WebCode	Item 4 Methods & Results
2JKAJH	**Method(s)**: Random Match Probability **Stats Analysis**: A Mixture of human DNA profiles was identified in Item 4 that has been interpreted as a mixture of 2 people. A major human male DNA profile was identified in Item 4 from which the suspect (Item 2) cannot be excluded (is included). The expected frequency of occurrence for this profile was calculated for the African American, Caucasian, and Hispanic population groups and was found to be no more common than approximately 1 in 260 octillion unrelated individuals.
3VXMKJ	**Method(s)**: Likelihood Ratio **Stats Analysis**: The LR has been calculated using a PowerPlex 21 calculator as no Globalfiler calculation sheet was available for use. Therefore only overlapping loci were utilized for the LR calculation. The suspect cannot be excluded as a source of the major component. The evidence is at least 100 billion times more likely if the major component of the DNA profile obtained originated from the suspect than if it originated from another unknown, unrelated individual selected at random from the [Country] Caucasian sub-population. In my opinion, this finding when considered in isolation from other information provides strong support for the proposition that the major component of the DNA profile obtained came from the suspect. Please note: The LR was in excess of 100 billion but has been truncated to 100 billion as per laboratory protocol.
AARRJF	**Method(s)**: [Participant did not report a Method] **Stats Analysis**: For the GlobalFiler DNA data I am only able to identify the DNA profile of the major contributor. The alleles listed as minor are NOT a DNA profile(s). It is only a listing of the alleles that are present from the minor contributor(s). You do not appear to offer an option for identifying the data for this particular circumstance. The yFiler data is consistent with that of a major and a minor DNA profile and are identified as such. I am a forensic consultant that reviews DNA case files that are 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 do not calculate population statistics as part of my case reviews. I accept that the population calculations are correct. N/A = Not Applicable, NSD = No Size Data
BAKY46	**Method(s)**: Random Match Probability **Stats Analysis**: The probability of obtaining a matching major profile if the high level DNA was from someone unrelated to the suspect is less than 1 in 1 billion (thousand million). No stat done for Y-STR.
CLVQ86	**Method(s)**: Random Match Probability **Stats Analysis**: The probabilities of selecting an unrelated individual at random having a DNA profile matching the major contributor of the profile obtained from this item are approximately: 1 in 9.31 x 10^{21}.
CWCDG7	**Method(s)**: Likelihood Ratio **Stats Analysis**: Total Likelihood Ratio is 1.99773e+019
DX8JB6	**Method(s)**: [Participant did not report a Method] **Stats Analysis**: We can't perform the calculation because our software isn't parameterized, we don't use the kit GlobalFiler in routine.
EHMHT6	**Method(s)**: Random Match Probability **Stats Analysis**: A mixture of human DNA profiles was identified in Item 4 that has been interpreted as a mixture of two people. A major human male DNA profile was identified in Item 4 from which the suspect (Item 2) cannot be excluded (is included). The expected frequency of occurrence for this profile was calculated for the African American, Caucasian, and Hispanic population groups and was found to be no more common than approximately 1 in 260 octillion unrelated individuals.

TABLE 6

WebCode	Item 4 Methods & Results
EYTMH3	**Method(s)**: [Participant did not report a Method]
	Stats Analysis: No statistical calculations performed.
FAE266	**Method(s)**: Random Match Probability
	Stats Analysis: The DNA typing profile obtained from item 4 (the sperm fraction from the victim's vaginal swab) is of mixed origin consistent with having originated from at least three individuals. The profile of the major male component matches that of the known sample, item 2 (suspect). The estimated probability of selecting an unrelated individual at random from the U.S. population with a matching profile is 1 in 360 Nonillion.
FPJDQ4	**Method(s)**: Likelihood Ratio
	Stats Analysis: The probability of a randomly selected unrelated individual having a DNA profile which matched with Item 2 that is consistent with being one of the contributor is approximately (i) 1 in 24 trillion as calculated based on the [Country] [Nationality] DNA population database. (ii) 1 in 42 trillion as calculated based on the [Country] [Nationality] DNA population database. (iii) 1 in 49 trillion as calculated based on the [Country] [Nationality] DNA population database.
NMNLXV	**Method(s)**: Random Match Probability
	Stats Analysis: A major male human DNA profile was identified in item 4 from which the male suspect cannot be excluded (is included). The expected frequency of occurrence for this DNA profile was calculated for the African American, Caucasian, and Hispanic population groups and was found to be no more common than approximately 1 in 260 octillion unrelated individuals.
NW4LZL	**Method(s)**: Likelihood Ratio
	Stats Analysis: The major components of the DNA profile are 100 billion times more likely if the suspect is a contributor to the DNA profile than if another unknown, unrelated person chosen at random from the [Country] Caucasian population is. Y STR: no matches in 156,181 haplotypes
NY698W	**Method(s)**: Random Match Probability
	Stats Analysis: A mixture of human DNA profiles was identified in the sperm fraction of the vaginal swabs (Item 4) that was interpreted as a mixture of two people. A major male DNA profile was identified from which the suspect (Item 2) cannot be excluded (is included). The expected frequency of occurrence for this profile was calculated at 23 loci for the African American, Caucasian and Hispanic population groups and was found to be no more common than approximately 1 in 260 octillion unrelated individuals. A minor human DNA profile was identified at 8 loci.
PAVKVU	**Method(s)**: Likelihood Ratio
	Stats Analysis: The probabilities of a randomly selected unrelated individual having a matching DNA profile with the profile obtained from "Item 2" and being one of the contributors to this mixed DNA profile is approximately: a) 1 in 220 sextillion (220×10^{21}), as calculated based on the [Country] [Nationality] population database. b) 1 in 5.4 septillion (5.4×10^{24}), as calculated based on the [Country] [Nationality] population database. c) 1 in 1.7 septillion (1.7×10^{24}), as calculated based on the [Country] [Nationality] population database.

TABLE 6

WebCode	Item 4 Methods & Results
PJBKWK	**Method(s)**: Random Match Probability
	Stats Analysis: The genetic profile obtained from Item 4 consists of a mixture of DNA, interpreted as a mixture of 2 individuals with one major genetic profile and minor alleles. The suspect cannot be excluded as a contributor to this major genetic profile. This major genetic profile is expected to occur in approximately 1 in 425 octillion in the Caucasian population, in approximately 1 in 38 nonillion in the African American population and in approximately 1 in 339 octillion in the Hispanic population. The haplotype profile obtained from Item 4 is a mixture of DNA interpreted as a mixture of two males with one major haplotype profile and minor alleles. The suspect cannot be excluded as a possible contributor to this major haplotype profile. This major haplotype profile is expected to occur in approximately 1 in 2488 unrelated males in the Caucasian population, in approximately 1 in 2083 unrelated males in the African American population and in approximately 1 in 1592 unrelated males in the Hispanic population. Barring mutation, any male related to the suspect through paternal lineage would also exhibit this haplotype profile.
Q2Z2UQ	**Method(s)**: [Participant did not report a Method]
	Stats Analysis: The profile of Item 4 has additional peaks (other than the ones of the profile of Item 2). However, it is not possible to precisely indicate if these peaks constitute a full distinguishable profile of another individual.
QNXBCR	**Method(s)**: Likelihood Ratio
	Stats Analysis: The software validated at this laboratory [Lab Name] for probabilistic genotyping (STRmix and LikeLTD) is NOT validated for Global Filer or Fusion 5C / 6C. However, assuming the alternatives being considered are suspect + unknown versus two unknowns, then I would expect a likelihood ratio in excess of one billion in favour of the first alternative over the second (one billion being the upper limit used to report likelihood ratios and match probabilities in the [Country])(NB: One billion is one thousand million). Given this statistical evaluation, a statistical evaluation of the less discriminating Y-STR results has not been conducted.
QVU6AQ	**Method(s)**: [Participant did not report a Method]
	Stats Analysis: No statistics performed. For databasing purposes only
TWJFXN	**Method(s)**: Likelihood Ratio
	Stats Analysis: The observed mixture profile is approximately 2.84×10^{19}, 2.51×10^{17}, and 3.65×10^{17} times more likely to occur under the scenario that it is a mixture of DNA from the suspect and an unknown, as opposed to the scenario that it originated from a mixture of DNA from two unrelated unknown individuals, in the African American, Caucasian, and Hispanic population, respectively.
UZYX2R	**Method(s)**: Random Match Probability
	Stats Analysis: African American Population Probability - 1 in 2,321,000,000,000,000,000,000,000,000,000. Caucasian Population Probability - 1 in 51,600,000,000,000,000,000,000,000,000
W9K4MN	**Method(s)**: Random Match Probability
	Stats Analysis: Using 21 of 21 loci, the probabilities of selecting an unrelated individual at random having a DNA profile consistent with the primary DNA profile obtained from the vaginal swab male fraction (Item 4) are approximately: • 1 in 424 Octillion Caucasians • 1 in 22.8 Nonillion African Americans • 1 in 339 Octillion Hispanics
Z3KT6K	**Method(s)**: Random Match Probability
	Stats Analysis: The probability of selecting an unrelated individual at random having DNA STR alleles for the autosomal loci, except D12S391, D22S1045, and FGA, consistent with the major contributor profile detected in Submission 4 is approximately 1 in 50 octillion [5E28] in the Caucasian population and 1 in 2 nonillion [2E30] in the African American population.

TABLE 6

WebCode	Item 4 Methods & Results
ZFQTUJ	**Method(s)**: Likelihood Ratio
	Stats Analysis: The probability of a randomly selected unrelated individual having a matching DNA profile with the DNA profile obtained from "Item 2" and being one of the contributors to this mixed DNA profile is approximately: a)1 in 220 sextillion (220 x 10^21) as calculated based on [Country] [Nationality] population database. b)1 in 5.4 septillion (5.4 x 10^24)as calculated based on [Country] [Nationality] population database. c)1 in 1.7 septillion (1.7 x 10^24)as calculated based on [Country] [Nationality] population database.

Databases Used

TABLE 7

WebCode	Databases Used
2JKAJH	Item 3: FBI Expanded Database Item 4: FBI Expanded Database
3VXMKJ	Item 3: [Country] Caucasian sub-population Item 4: [Country] Caucasian sub-population.
CLVQ86	Item 3: Laboratory internal database for [country] population. Item 4: Laboratory internal database for [country] population.
CWCDG7	Item 3: [Country] Database Item 4: [Country] Database
EHMHT6	Item 3: 2015 Expanded FBI STR Population Data. Item 4: 2015 Expanded FBI STR Population Data.
FAE266	Item 3: FBI Expanded 2015, BLK, CAU, SWH Item 4: FBI Expanded 2015, BLK, CAU, SWH
FPJDQ4	Item 3: [Location-identifying databases listed by participant.] Item 4: [Location-identifying databases listed by participant.]
NMNLXV	Item 3: FBI expanded database Item 4: FBI expanded database
NW4LZL	Item 3: [Country] Caucasian Y HRD haplotype database Item 4: [Country] Caucasian Y HRD haplotype database
NY698W	Item 3: FBI extended population database Item 4: FBI extended population database
PAVKVU	Item 3: [Location-identifying databases listed by participant.] Item 4: [Location-identifying databases listed by participant.]
PJBKWK	Item 3: NIST Revised July 2017 US Y-STR Item 4: NIST Revised July 2017 US Y-STR
TWJFXN	Item 3: LabRetriever Item 4: LabRetriever
UZYX2R	Item 3: Expanded FBI STR 2015 Item 4: Expanded FBI STR 2015
W9K4MN	Item 3: NIST
Z3KT6K	Item 3: \\10.64.13.226\CODIS\Popstats\POPDATA\FBI\Expanded FBI STR 2015\Expanded FBI STR 2015 Item 4: \\10.64.13.226\CODIS\Popstats\POPDATA\FBI\Expanded FBI STR 2015\Expanded FBI STR 2015
ZFQTUJ	Item 3: [Location-identifying databases listed by participant.] Item 4: [Location-identifying databases listed by participant.]

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
3VXMKJ	Powerplex 21 currently used. Yfiler Plus has recently been validated but is not currently in use due to organisational approval processes. Globalfiler is currently under validation.
BAKY46	Powerplex ESI 17, NGM SElect.
CWCDG7	Autosomal kits: Powerplex Fusion, Powerplex ESX, Powerplex ESI, AmpFISTR NGM. Y-STR kits: Powerplex Y23, AmpFISTR Y-Filer
EYTMH3	GlobalFiler Power Plex Y23 Yfiler Plus
FAE266	PP F6C, Yfiler, PPY23
Q2Z2UQ	GlobalFiler PCR Amplification Kit Yfiler Plus PCR Amplification Kit NGM Detect PCR Amplification Kit
QNXBCR	NGM-SElect, PowerPlex Y23, NGM Detect, Globalfiler and ESI-17
QVU6AQ	GlobalFiler, PPY23

Additional Comments
TABLE 9

WebCode	Additional Comments
2JKAJH	Item 3 "major" profile represents the deduced male profile. The "minor" profile represents the assumed female victim. Inconclusive= Any possible sister allele.
AARRJF	*The pdf files for GlobalFiler are printed with an analytical threshold of 75rfu. This is a problem for those of us that do not have the ability to reanalyze the fsa files at thresholds less than 75rfu. It is possible that there is important information below 75rfu that we are unable to evaluate. In addition, 75rfu is a rather conservative analytical threshold for GlobalFiler. Many forensic laboratories use 50rfu as the analytical threshold for GlobalFiler and some even lower at 25rfu. For future tests you should provide pdf files that have been made with a lower analytical threshold. As a result of the limitations caused by the pdf GlobalFiler files with an analytical threshold of 75rfu, I have called the comparison of the victim DNA profile (item #1) to the DNA profile obtained from item #4 inconclusive and I have given a conservative determination of 3 contributors as the number of contributors to item #4. If the pdf files were printed at a lower threshold, I may have been able to be more definitive excluding the victim DNA profile from item #4 and said that there were 2 contributors (rather than 3) to the DNA profile for item #4. The possibility exists for only 2 contributors based on the yFiler DNA data for item #4.
CWCDG7	Standard options used for fragment analyses in GeneMarker: Peak detection threshold -> min. intensity: 30 rfu, percentage: >3% global max. local region: >15% loccal max, stutter peak filter; left 45% and right 15%. It also depends on the positive control, negative control and ladder used in the kit. For degaded or weak samples we call the peaks for heterozygosity above 20 rfu and for homozygosity above 30 rfu. For mixed profiles containing both low and high peaks, whether a low peak is called or not, also depends on factors such as the likelihood of the peak being stutter and the amound of background noise in the profile in general. Statiscical analyses were performed on autosomal results only.
EHMHT6	ND = Not Detected. NT = Not Tested. Inc = Inconclusive (any possible sister allele). For Item #3, the "Major" profile represents the deduced male profile. The "Minor" profile represents the assumed female victim.
EYTMH3	NR = No Results. NT = Not Tested
FAE266	The normal practice in this laboratory is to treat the epi and sperm fraction of a sample as from a single item. We would not normally process the epi fraction as a separate item and provide statistic analysis when it is an intimate sample.
FPJDQ4	15 STR loci were used to calculate the statistical probability instead of Globafiler which is not currently available in our laboratory procedure.
NMNLXV	For Item #3 the "Major" profile represents the deduced male profile. The "Minor" profile represents the assumed female victim. Abbreviations defined: ND = Not Detected. NT = Not Tested. inc = inconclusive (i.e. any possible sister allele)
NY698W	For Item #3 the "Major" profile represents the deduced male profile. The "Minor" profile represents the assumed female victim. Inconclusive = any possible sister allele.
PAVKVU	1. The statistical calculations were carried out using DNA View Software. 2. The Globalfiler Analysis were based on the GA 3500xl interpretation guidelines indicated in page 2 [Table 1]. 3. The YSTR Analysis were based on the GA 3130xl interpretation guidelines as follows: - Analytical Threshold: 50 rfu - Peak Height Ratio: 60% - Stochastic Threshold (Peak Amplitude): 100 rfu
QNXBCR	For information purposes, [Laboratory] uses both LikeLTD and STRMix as probabilistic genotyping software for the statistical evaluation of mixed autosomal DNA results.

TABLE 9

WebCode	Additional Comments
QVU6AQ	Item 4: Low-level minor profile not deduced; minor alleles recorded
W9K4MN	Results were identified in the Item 4 sample that could not have originated from the victim (Item 1) or from the suspect (Item 2).
ZFQTUJ	1. The statistical calculations were carried out using DNA View Software. 2. The Globalfiler Analysis were based on 3500xL interpretation guidelines indicated in page 2 [Table 1]. 3. For YSTR Analysis were based on the 3130xL interpretation guidelines as follows: Analytical Threshold: 50 rfu, Peak Height Ratio: 60%, Stochastic Threshold (Peak Amplitude): 100 rfu

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 18-588: DNA Interpretation

DATA MUST BE SUBMITTED BY **June 4, 2018, 11:59 p.m.** TO BE INCLUDED IN THE REPORT

Participant Code: U1234F   WebCode: JJPUM3

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>
Police are investigating a sexual assault case involving a female victim who was found unconscious by her friends at a house party. At the hospital, the victim was examined and samples were collected for DNA analysis. The victim's friends described a man that was spending a lot of time with the victim at the party. Upon investigation, a male suspect was identified and arrested.

Known samples from the female victim (Item 1) and the male suspect (Item 2) are provided. Vaginal swabs were submitted to the Serology unit which identified a mixture of blood and semen. The DNA unit performed a differential extraction on the sample to separate the fractions into the epithelial fraction (Item 3) and the sperm fraction (Item 4). The DNA unit has completely consumed all evidence and has provided you with DNA profiles obtained from the items. You are requested to evaluate the DNA profiles using your laboratory specific analysis guidelines and report your results.

FSA, HID and PDF file formats are provided for use in this test, choose any or all formats for evaluation.

<u>Items Submitted (Sample Pack INT1):</u>
Item 1: DNA profile from reference sample (Female Victim)
Item 2: DNA profile from reference sample (Male Suspect)
Item 3: DNA profile found in the epithelial fraction from the victim's vaginal swab
Item 4: DNA profile found in the sperm fraction from the victim's vaginal swab

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Please note Data Sheet Changes

Reporting of YSTR alleles generated from primarily autosomal STR multiplex systems.
1. **The YSTR loci commonly generated using STR multiplex systems are now included in the STR section. (DYS391, DYS570, DYS576, Y Indel)**
2. **There is no longer a need to transcribe YSTR results from STR multiplex systems to the YSTR section.**

For probabilistic genotyping software, a text field has been added directly below the amplification kit section for each item to capture which software was used.

Test No. 18-588 Data Sheet, continued

<div align="right">

Participant Code: U1234F
WebCode: JJPUM3

</div>

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.

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

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!!! IMPORTANT NOTE !!!

If you opt to analyze the .FSA files for Identifiler Plus, please note that you must change your analysis settings for the LIZ GS500 size standard to ignore the 250 and 340 bp peaks.

If you opt to analyze the .FSA files for YFiler, please note that you must change your analysis settings for the LIZ GS500 size standard to ignore the 250 bp peak.

- 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.

Test No. 18-588 Data Sheet, continued

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).

STR Amplification Kit Used For Item 1:

☐ GlobalFiler™   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ HID format   ☐ PDF format   ☐ FSA format

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

Report the Probabilistic Genotyping Software Used (if applicable): [   ]

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

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

YSTR Results for Known Item 1

YSTR Amplification Kit Used For Item 1:

☐ YFiler™   ☐ PowerPlex® Y23

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

☐ FSA format   ☐ HID format   ☐ PDF format

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

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

Test No. 18-588 Data Sheet, continued   Participant Code: U1234F
                                                                                          WebCode: JJPUM3

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).

STR Amplification Kit Used For Item 2:   Please indicate the electropherogram(s) reviewed for this test.

☐ GlobalFiler™   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ HID format   ☐ PDF format   ☐ FSA 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™   ☐ PowerPlex® Y23   ☐ FSA format   ☐ HID format   ☐ PDF format

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

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

Test No. 18-588 Data Sheet, continued

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).
- 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™   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ HID format   ☐ PDF format   ☐ FSA 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™   ☐ PowerPlex® Y23   ☐ FSA format   ☐ HID format   ☐ PDF format

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

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

Part I: DNA ANALYSIS (continued)
Item 3 DNA Analysis Questions

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

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

Item 1 Conclusion

○ Item 1 (victim) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 3.

○ Item 1 (victim) is excluded as a possible contributor to the DNA obtained from Item 3.

○ The DNA typing results for Item 3 in comparison with Item 1 are inconconclusive/uninterpretable.

Item 2 Conclusion

○ Item 2 (suspect) is included (cannot be excluded) as a possible contributor to the DNA obtained from Item 3.

○ Item 2 (suspect) is excluded as a possible contributor to the DNA obtained from Item 3.

○ The DNA typing results for Item 3 in comparison with Item 2 are inconconclusive/uninterpretable.

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

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

☐ Combined Probability of Exclusion/Inclusions (CPE/CPI)   ☐ Likelihood Ratio (LR)

☐ Random Match Probability (RMP)   Other: [   ]

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

[   ]

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

[   ]

Test No. 18-588 Data Sheet, continued

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).
- 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™   ☐ PowerPlex® Fusion 5C   ☐ PowerPlex® Fusion 6C
☐ HID format   ☐ PDF format   ☐ FSA 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™   ☐ PowerPlex® Y23   ☐ FSA format   ☐ HID format   ☐ PDF format

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

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

Part I: DNA ANALYSIS (continued)
Item 4 DNA Analysis Questions

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

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

<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 inconclusive/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 inconclusive/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.**

Test No. 18-588 Data Sheet, continued

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.

Test No. 18-588 Data Sheet, continued   Participant Code: U1234F
                                                          WebCode: JJPUM3

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
<u>only if your laboratory is accredited in this testing/calibration discipline</u>
by one or more of the following Accreditation Bodies.

CTS REQUIRES AN ANSWER TO THE RELEASE QUESTION ABOVE

<u>Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory</u>

<u>Step 2: Complete the Laboratory Identifying Information in its entirety</u>