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**DNA Case Report
December 21, 2023**

To:
Detective Terry J. Leach
Fairfax County Police Department
4890 Alliance Drive
Fairfax, VA 22030

Bode Case #: CCB2398-0538
Agency Case #: 2023-0550048
Additional Agency Case #: 23-2789

Victims: Christine Banfield; Joseph Ryan
Suspects: Brendan Banfield; Juliana Magalhaes

List of evidence received on August 29, 2023 for possible DNA analysis:

Evidence received and evaluated, but not processed, is listed in the case inventory.

<u>Bode Sample Name</u>	<u>Agency Sample ID</u>	<u>Agency Description</u>
CCB2398-0538-E-01	1545939	84 - blue jeans
<i>CCB2398-0538-E-01a</i>		<i>Front right leg avoiding staining</i>
<i>CCB2398-0538-E-01b</i>		<i>Front right leg red/brown staining</i>

List of profiles provided on December 12, 2023 by Fairfax County Police Department for comparison purposes:

<u>Agency Sample ID</u>	<u>Agency Description</u>
77 BB sus	Brendan Banfield (suspect)
78 JPM sus	Juliana Magalhaes (suspect)
91 CB vic	Christine Banfield (victim)
92 JR vic	Joseph Ryan (victim)

STR Processing, Results, Conclusions, and Statistics:

The evidence was processed for DNA typing using the PowerPlex® Fusion kit.

1. DNA profiles were provided for samples 77 BB sus (Brendan Banfield), 78 JPM sus (Juliana Magalhaes), 91 CB vic (Christine Banfield), and 92 JR vic (Joseph Ryan).
2. The DNA profile obtained from sample CCB2398-0538-E-01a is consistent with a mixture of three or more individuals with a major mixture component of two individuals including a major male contributor (Male 1).

This deduced major component DNA profile matches the DNA profile provided for Joseph Ryan. The probability of randomly selecting an unrelated individual with this DNA profile is at least 1 in 180 septillion in the US population.

This deduced minor component DNA profile matches the DNA profile provided for Christine Banfield. The probability of randomly selecting an unrelated individual with this DNA profile is at least 1 in 83 sextillion in the US population.

The following loci were not used in the statistical calculation due to the inability to resolve a minor component: D10S1248 and D21S11.

Brendan Banfield and Juliana Magalhaes are excluded as possible contributors to the major mixture component DNA profile deduced from the sample listed above.

STR Processing, Results, Conclusions, and Statistics (Continued):

Due to the possibility of allelic drop out, no conclusions can be made on the minor alleles that are not part of the major mixture.

3. The DNA profile obtained from sample CCB2398-0538-E-01b is consistent with a mixture of three or more individuals with a major mixture component of two individuals including a major male contributor (Male 1).

This deduced major component DNA profile matches the DNA profile provided for Joseph Ryan. The probability of randomly selecting an unrelated individual with this DNA profile is at least 1 in 180 septillion in the US population.

This deduced minor component DNA profile matches the DNA profile provided for Christine Banfield. The probability of randomly selecting an unrelated individual with this DNA profile is at least 1 in 12 sextillion in the US population.

The following loci were not used in the statistical calculation due to the inability to resolve a minor component: D10S1248, D21S11, D5S918, and D22S1045.

Brendan Banfield and Juliana Magalhaes are excluded as possible contributors to the major mixture component DNA profile deduced from the sample listed above.

Due to the possibility of allelic drop out, no conclusions can be made on the minor alleles that are not part of the major mixture.

See **Table 1** for summary of STR alleles reported/provided for each sample.

Notes:

1. Testing performed for this case is in compliance with accredited procedures under the laboratory's ISO/IEC 17025:2017 accreditation issued by ANAB. Refer to certificate and scope of accreditation for certificate number FT-0268.
2. The DNA data reported in this case were determined by procedures that have been validated according to the standards established in the FBI's Quality Assurance Standards for Forensic DNA Testing Laboratories.
3. Evidence descriptions are based on the written descriptions of the samples by the submitting agency.
4. The results apply to the items tested or data provided, as received.
5. The opinions and interpretations included in this report are those of the undersigned analyst.
6. This test report shall not be reproduced, except in full, without the written approval of the laboratory.
7. The evidence will be returned to Fairfax County Police Department.
8. All statistical calculations were performed using allele frequencies taken from "US population data for 29 autosomal STR loci" as published in *Forensic Sci. Int. Genet.* 7 (3) (2013) e82-83 and updated according to *Forensic Sci. Int. Genet.* 31 (2017) e36-40.

Report submitted by,



Maddie Crowley, BS
DNA Analyst II

Table 1: Analysis of Short Tandem Repeat Loci

Locus	CCB2398-0538-E-01a1	CCB2398-0538-E-01a1 (Major Component)	CCB2398-0538-E-01a1 (Major Mixture Component)	CCB2398-0538-E-01a1 (Minor Component from Major Mixture)
Amelogenin	X, Y	X, Y	X, Y	X, ---
D3S1358	15, 16, (17)	15, 16	15, 16, (17)	17, ---
D1S1656	(12), (15.3), (17), 17.3, 18.3	17.3, 18.3	(12), (17), 17.3, 18.3	12, 17
D2S441	(10), (11), 11.3, 14	11.3, 14	(10), (11), 11.3, 14	10, 11
D10S1248	(13), 14, 15	14, 15	Inconclusive	Inconclusive
D13S317	11, (12), (13)	11, 11	11, (12), (13)	12, 13
Penta E	5, (7), 11	5, 11	5, (7), 11	7, 7
D16S539	11, (12), (13), (14), (15)	11, 11	11, (13), (15)	13, 15
D18S51	(12), 15, 16	15, 16	(12), 15, 16	12, 12
D2S1338	(19), 22, (24), 25	22, 25	(19), 22, (24), 25	19, 24
CSF1PO	10, (11), 12, (13)	10, 12	10, (11), 12, (13)	11, 13
Penta D	9, (11), (12)	9, 9	9, (11)	11, 11
TH01	6, 9, (9.3)	6, 9	6, 9, (9.3)	9.3, 9.3
vWA	(17), 18	18, 18	(17), 18	17, ---
D21S11	29, (30), 31.2	29, 31.2	29, 31.2	Inconclusive
D7S820	(8), 11, 12	11, 12	(8), 11, 12	8, ---
D5S818	11, 12, (13)	11, 12	11, 12, (13)	13, ---
TPOX	8, 8	8, 8	8, 8	8, 8
DYS391	10	N/A	N/A	N/A
D8S1179	13, (14)	13, 13	13, (14)	14, ---
D12S391	(17), (18), 20, 21, (22)	20, 21	(18), 20, 21, (22)	18, 22
D19S433	14, 14	14, 14	14, 14	14, 14
FGA	20, 21, (24)	20, 21	20, 21, (24)	24, ---
D22S1045	(11), 15, 16, (17)	15, 16	(11), 15, 16, (17)	11, 17

() = Minor Allele

--- = Possible Additional Alleles

Table 1: Analysis of Short Tandem Repeat Loci (continued)

Locus	CCB2398-0538-E-01b1	CCB2398-0538-E-01b1 (Major Component)	CCB2398-0538-E-01b1 (Major Mixture Component)	CCB2398-0538-E-01b1 (Minor Component from Major Mixture)
Amelogenin	X, Y	X, Y	X, Y	X, ---
D3S1358	15, 16, (17)	15, 16	15, 16, (17)	17, ---
D1S1656	(12), (17), 17.3, 18.3	17.3, 18.3	(12), (17), 17.3, 18.3	12, 17
D2S441	(10), (11), 11.3, 14	11.3, 14	(10), (11), 11.3, 14	10, 11
D10S1248	(13), 14, 15	14, 15	Inconclusive	Inconclusive
D13S317	11, (12), (13)	11, 11	11, (12), (13)	12, 13
Penta E	5, (7), 11	5, 11	5, (7), 11	7, ---
D16S539	11, (12), (13), (14), (15)	11, 11	11, (13), (15)	13, 15
D18S51	(12), 15, 16	15, 16	(12), 15, 16	12, 12
D2S1338	(19), 22, (24), 25	22, 25	(19), 22, (24), 25	19, 24
CSF1PO	10, (11), 12, (13)	10, 12	10, (11), 12, (13)	11, 13
Penta D	9, (11), (14)	9, 9	9, (11)	11, 11
TH01	6, 9, (9.3)	6, 9	6, 9, (9.3)	9.3, 9.3
vWA	(17), 18	18, 18	(17), 18	17, 17
D21S11	29, (30), 31.2	29, 31.2	29, 31.2	Inconclusive
D7S820	(8), 11, 12	11, 12	(8), 11, 12	8, ---
D5S818	11, 12, (13)	11, 12	Inconclusive	Inconclusive
TPOX	8, 8	8, 8	8, 8	8, 8
DYS391	10	N/A	N/A	N/A
D8S1179	13, (14)	13, 13	13, (14)	13, 14
D12S391	(18), 20, 21, (22)	20, 21	(18), 20, 21, (22)	18, 22
D19S433	(10.2), 14	14, 14	14, 14	14, 14
FGA	20, 21, (24)	20, 21	20, 21, (24)	24, 24
D22S1045	(11), 15, 16	15, 16	Inconclusive	Inconclusive

() = Minor Allele

--- = Possible Additional Alleles

Table 1: Analysis of Short Tandem Repeat Loci (continued)

Locus	77 BB sus (Brendan Banfield)*	78 JPM sus (Juliana Magalhaes)*	91 CB vic (Christine Banfield)*	92 JR vic (Joseph Ryan)*
Amelogenin	X, Y	X	X	X, Y
D3S1358	14, 18	17, 18	16, 17	15, 16
D1S1656	13, 16	12, 14	12, 17	17.3, 18.3
D2S441	11, 14	10, 14	10, 11	11.3, 14
D10S1248	13, 14	13, 17	13, 14	14, 15
D13S317	8, 12	9, 12	12, 13	11
Penta E	7, 15	10, 11	7	5, 11
D16S539	11, 13	11, 12	13, 15	11
D18S51	14, 15	14, 18	12	15, 16
D2S1338	17, 23	17, 25	19, 24	22, 25
CSF1PO	10	11, 13	11, 13	10, 12
Penta D	8, 14	9, 12	11	9
TH01	7, 8	9, 9.3	9.3	6, 9
vWA	17, 18	15, 16	17	18
D21S11	30, 30.2	28, 30	29	29, 31.2
D7S820	10, 11	11	8, 12	11, 12
D5S818	11, 12	12	11, 13	11, 12
TPOX	8, 11	8, 11	8	8
DYS391	9	---	---	10
D8S1179	10, 15	12, 14	13, 14	13
D12S391	17, 22	17, 18	18, 22	20, 21
D19S433	12, 14	13.2, 15	14	14
FGA	21	21, 24	24	20, 21
D22S1045	15, 16	15, 16	11, 17	15, 16

*Profile provided by Fairfax County Police Department
 --- Indicates no type detected