South Texas Regional Crime Laboratory 1 Austin Way Austin, TX 12345

DNA Analysis Report

Investigating Officer: Detective Jones **Report Date**: February 10, 2016

Persons of Interest:

Victim: Maria Murphy
Suspect: Sebastian Bruno

List of Evidence:

01-01: swabbing from ligature removed from Maria Murphy's hands
03-01: cuttings of three stains having the appearance of semen from light grey hooded sweatshirt
04-01: vaginal swabs
04-05-AA: right hand fingernail swabs

05: Blood card from Maria Murphy
06: Buccal swab standard, Sebastian Bruno

Requested Analysis: Perform forensic DNA analysis.

Refer to the Biological Screening Report for additional information.

Evidence Description, Results of Analysis and Interpretation:

Portions of the items were extracted by a method which yields DNA.

When necessary, the items were extracted by a two-step method which first recovers DNA from non-sperm cells (epithelial cell fraction) and then recovers DNA from sperm cells (sperm cell fraction).

The DNA isolated was analyzed using STR (Short Tandem Repeat) PCR (Polymerase Chain Reaction) analysis. The following loci were examined: D8S1179, D21S11, D7S820, CSF1PO, D3S1358, TH01, D13S317, D16S539, D2S1338, D19S433, vWA, TPOX, D18S51, Amelogenin, D5S818, and FGA.

01-01: swabbing from ligature removed from Maria Murphy's hands

The partial DNA profile obtained from this item is consistent with a mixture. Assuming three donors to the mixture, Maria Murphy and Sebastian Bruno cannot be excluded as possible contributors to this profile. The following loci were used for statistical significance estimation: D8S1179, D21S11, D7S820, CSF1PO, and Amelogenin. At these loci, the probability of selecting an unrelated person at random who could be a contributor to this DNA profile is approximately 1 in 835 for Caucasians, 1 in 746 for African Americans, and 1 in 801 for Hispanics. The approximate world population is 7.0 billion.

03-01: cuttings of three stains having the appearance of semen from light grey hooded sweatshirt

The DNA profile obtained from this item is consistent with a mixture of at least three contributors. Due to the low level of data present above our thresholds, no comparisons will be made.

04-01: vaginal swabs from Maria Murphy

The DNA profile from the epithelial cell fraction of this item is consistent with the DNA profile of Maria Murphy.

The DNA profile from the sperm cell fraction of this item is consistent with a mixture from Maria Murphy and Sebastian Bruno. Sebastian Bruno cannot be excluded as the contributor of the major component in the profile. The probability of selecting an unrelated person at random who could be the source of the major component in this profile is approximately 1 in 4,000,000,000,000,000 (4 quadrillion) for Caucasians, 1 in 3,800,000,000,000,000 (3.8 quadrillion) for African Americans, and 1 in 3,900,000,000,000,000 (3.9 quadrillion) for Hispanics. To a reasonable degree of scientific certainty, Sebastian Bruno is the source of the foreign DNA in the profile (excluding identical twins).

4-05-AA: right hand fingernail swabs from Maria Murphy

The DNA profile obtained from this item is consistent with a mixture of at least two individuals.

Maria Murphy cannot be excluded as a contributor to the profile.

Due to the quantity and/or quality of DNA obtained, no conclusions can be made regarding the DNA profile obtained from the additional contributor(s).

05: Blood card from Maria Murphy

The DNA profile was used as a reference.

06: Buccal swab standard, Sebastian Bruno

The DNA profile was used as a reference.

Investigative Leads and Requirements for Further Analysis:

The known DNA profile of Sebastian Bruno will be entered into the Combined DNA Index System (CODIS).

The interpretation of DNA profiles in this case may be aided by probabilistic genotyping software, which DPS is in the process of validating. Should you require further analysis of these profiles utilizing probabilistic genotyping, please contact this laboratory.

Disposition:

The DNA extracts will be retained by our Laboratory. The remainder of the evidence has been returned to your agency.