

**Budgerigar DNA Analysis Form**

**KEY**

**Band ID# 1983 Sex: F**

**Locus A – Chick (Unknown parentage)**

Sequence 1: TACGATTTGCCCCTAAACCTACCTATAGCTAGCATCCTATAGCTAGCATCCT

Sequence 2: TACGATTTGCCCCTAAACCTACCTATAGCTAGCATCCTCTAGCATCCT

Genotype (Number of repeats): 25 / 27

**Locus A – Possible sire #1911**

Sequence 1: TACGATTTGCCCCTAAACCTACCTATAGCTAGCATCCT

Sequence 2: TACGATTTGCCCCTAACCTACCATAGCTAGCATCCTCT

Genotype: 33 / 33

**Locus A – Possible sire #1917**

Sequence 1: TACGATTTGCCCCTAAACCTACCTATAGCTAGCCATCCTCTAGCATCCT

Sequence 2: TACGATTTGCCCCTAAACCTACCTATTAGCCATCCTCTTATAGCTAGCATCCT

Genotype: 27 / 25

**Locus A – Possible sire #1901**

Sequence 1: TACGATTTGCCCCTATCCTACCTATGCCAGCTAGCATCCT

Sequence 2: TACGATTTGCCCCTAACCTACCTATAGCTAGCATCCTATGCCAGCCT

Genotype: 31 / 28

**Locus A – Possible dam #1920**

Sequence 1: TACGATTTGCCCCTAAACCTACCTATAGCTTGCCAGCATCCT

Sequence 2: TACGATTTGCCCCTAAACCTACCTATAGCTGCCAGCATCCTATCCT

Genotype: 30 / 28

**Locus A – Possible dam #1908**

Sequence 1: TACGATTTGCCCCTAAACCTACCTCATAGCTAGCATCCT

Sequence 2: TACGATTTGCCCCTAAACCTACCTCATAGCTAGCATCCT

Genotype: 32 / 32

**Locus A – Possible dam #1919**

Sequence 1: TACGATTTGCCCCTAAACCTACCTATCCAGCTAGCATCCT

Sequence 2: TACGATTTGCCCCTAAACCTACCTATAGCTAGCATCCTCTAGCATCCT

Genotype: 31 / 27

Your name: \_\_\_\_\_ **KEY** \_\_\_\_\_

|   | Chick        | Male #1911   | Male #1917      | Male #1901   | Female #1920 | Female #1908 | Female #1919 |
|---|--------------|--------------|-----------------|--------------|--------------|--------------|--------------|
| Genotype  | <b>25/27</b> | <b>33/33</b> | <b>27/25</b>    | <b>31/28</b> | <b>30/28</b> | <b>32/32</b> | <b>31/27</b> |
| Which alleles could have been given to this chick by each individual? |              |              | <b>27 or 25</b> |              |              |              | <b>27</b>    |

### Analysis Questions:

- 1) Who was the father of the chick? **#1917 had to have been the father as he shares alleles with the chick.**
- 2) Provide evidence to support your answer for question 1 including which allele that parent provided. **Since the chick has allele 25 and allele 27, one of those had to have come from the father. Since this father has both, one of them was given to the chick.**
- 3) What was the mother of the chick? **#1919 had to have been the mother as she shares an allele with the chick.**
- 4) Provide evidence to support your answer for question 3 including which allele that parent provided. **This female possesses allele 27 and is the only hen that does. Since she could have only given the chick allele 27, allele 25 must have come from the father.**
- 5) Why are STRs ideal for distinguishing one individual from another? **They are unique to individuals, passed from parents to offspring, and easy to compare.**
- 6) Since STRs identify an individual, what other questions could they answer? **These can be used to test for relatedness among siblings, determine if twins are identical or fraternal, or identify an individual.**
- 7) Circle the individuals who had loci that were homozygous: #1911 **#1917** #1901 #1920 **#1908** #1919
- 8) Circle the individuals who had loci that were heterozygous: **#1911** #1917 **#1901** **#1920** #1908 **#1919**