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Dear BioPRYN Customer:

Thank you for your recent submission of samples for BioPRYN testing for Sheep & Goat. This letter explains the BioPRYN[®] Sheep & Goat Pregnancy Report and how you and your veterinarian can use the information to interpret the results. The BioPRYN test measures the level of placental Pregnancy-Specific Protein B (PSPB) in serum. PSPB is produced by the placenta and enters the animal's blood when a fetus is present. The BioPRYN assay can be reliably applied to detect pregnancy status in does and ewes 30 days post breeding by AI or from when the buck or ram was removed from the pen.

In the report, the information is displayed in five columns: **Tube Number; Animal ID; Response in Test, OD; PSPB Range;** and **Days Post Breeding**. The **Response in Test, OD** is a measure of optical density (how much light is absorbed by the sample). The OD signal is correlated to the amount of PSPB in the sample. In each assay, the OD of each sample and eight assay controls (standards) are measured. The standards are used to normalize the OD value of each sample to give a standardized OD output reported in the **Response in Test, OD** column.

The **Response in Test, OD** is compared with previously established ranges for determination of pregnancy category. Samples are categorized in four PSPB Ranges that are typical for sheep and goat: **Open, Low Recheck, High Recheck,** or **Pregnant**. The OD values for the ranges can be found just above the **Tube** and **Animal Numbers**. These PSPB ranges have been shown to be highly consistent with pregnancy status of ruminants when sampling is performed according to the prescribed protocol. If the **Response in Test, OD** is higher than 0.210, the animal has a level of PSPB that is significantly different from the average non-pregnant animal and is in the range of **Pregnant** animals; if **Response in Test, OD** value is lower than 0.135, the animal has a level of PSPB that is significantly different from the average pregnant sheep or goat and is in the range of **Open** (Not Pregnant) animals. The assay is semi-quantitative in a limited range but cannot tell you how many days the animal is in gestation due to a large amount of animal to animal variation in production of PSPB over the pregnancy. We categorize **High Recheck** when the **Response in Test, OD** is between 0.150- 0.210 and **Low Recheck** if the **Response in Test, OD** is between 0.135-0.150. A **Recheck** categorization means the animal has a serum level of PSPB that does not allow categorization in the Open or Pregnant ranges. A **High Recheck** animal has a level of PSPB that is slightly greater than a **Low Recheck** animal. There are a couple causes of **Recheck** status include: 1) the sample was taken too early in gestation (prior to 30 days), not allowing a high enough level of PSPB for a **Pregnant** categorization; 2) early embryonic death with decrease in PSPB that has not cleared from the blood at the time of sampling (PSPB clears within 4-7 days of embryo death when initially categorized in the **Recheck** range). Less than 5% of total samples are categorized in the **Recheck** range when tested according to the prescribed protocol. A follow up confirmatory test (within a week following the original sampling) will allow **Recheck** animals to attain a level of PSPB that provides a definitive categorization.

If an animal is categorized by BioPRYN in the **Open** range, 99.9% of these animals are open according to other methods of testing when the initial sample is taken at 30 days post breeding or later. The remaining animals are categorized in the **Pregnant, High Recheck** or **Low Recheck** ranges; a small percentage of animals in these ranges are actually open in follow up testing due to a low amount of residual PSPB from either a previous pregnancy or a new embryo that has recently died. If an animal

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is categorized **Pregnant**, 93 to 95% are categorized **Pregnant** in follow up testing. As indicated above, an animal in the **High Recheck** or **Low Recheck** ranges can be definitively categorized when sampled a week following the initial test. The **Recheck** categories can assist your herd management by identifying animals with abnormal pregnancy results that otherwise would not be indicated.

If you have any questions about your report, please contact us by email at testinglab@biotracking.com or by phone at 208.882.9736. Again, thank you for submitting samples for testing and we look forward to doing business with you in the future.

Thank you,

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