TO: Eliza Smaltz, Forensic Laboratory Manager

FROM: Allan Kosecki, Blood Alcohol Technical Leader

DATE: 18 November 2019

SUBJECT: Frozen Blood Alcohol Samples

On November 15, 2019 at about 10:30 AM Erika Canonico placed the bin containing the blood kits that she analyzed as part of batch 06Nov19 into the evidence intake freezer instead of the evidence intake refrigerator when returning the blood kits to Property and Evidence. Misty Bogue, Property and Evidence Supervisor, discovered the blood kits in the freezer on November 18, 2019 at about 6:00 AM and moved the bin containing the blood kits to the evidence intake refrigerator. The Blood Alcohol Procedures Manual requires that all samples in the custody of an analyst in the Toxicology section will be maintained in a refrigerated condition whenever access is not required for part of the analysis process. The manual further states that samples will be handled consistent with good forensic practices and that for long term storage, items will be returned to Property and Evidence or the submitting agency. This short-term, approximately 3-day, storage in the freezer is not consistent with good forensic practices because there is a possibility of the blood tubes breaking when frozen. Barring a cracked tube, storing the blood in a frozen state is an effective means of storing whole blood that is to be analyzed for ethanol content. In "Manual for Analysis of Ethanol in Biological Liquids", Dr. Dubowski states "When whole blood is to be analyzed, such storage should preferably be at -10^{o}C or lower temperature, which permits long-term storage without significant changes in original alcohol contents of the specimen".

Erika removed the blood kits from the refrigerator to conduct a visual inspection of the tubes to determine if any tubes had cracked in the freezing process. The list of blood kits in the bin and the results of Erika's inspection are documented in the following table:

DR number	Tube*	Visual observation
19-21234	Tube 1 (item 1293058)	**Cracked – blood leakage**
	Tube 2 (item 1293059)	Not cracked
19-21210	Tube 1 (item 1292992)	Not cracked
	Tube 2 (item 1292993)	Not cracked
19-21225	Tube 1 (item 1293032)	**Cracked – blood leakage**
	Tube 2 (item 1293033)	**Cracked – blood leakage**
19-21322	Tube 1 (item 1293197)	**Cracked – blood leakage**
	Tube 2 (item 1293198)	No cracked
19-13888	Tube 1 (item 1279171)	Not cracked
	Tube 2 (item 1279172)	Not cracked
19-20651	Tube 1 (item 1292054)	Not cracked
	Tube 2 (item 1292055)	Not cracked
19-20928	Tube 1 (item 1292498)	**Cracked – blood leakage**
	Tube 2 (item 1292499)	Not cracked
19-20806	Tube 1 (item 1292331)	Not cracked
	Tube 2 (item 1292332)	Not cracked
19-10048	Tube 1 (item 1271266)	**Tube intact with hairline fracture**
	Tube 2 (item 1271267)	**Tube intact with hairline fracture**

*Tube 1 refers to the blood tube analyzed by Erika. Tube 2 refers to the unopened blood tube.

For DR 19-21225, both blood tubes in the kit are cracked leaving no sample for independent analysis. The cracked tubes were placed in plastic bags that were heat sealed. The inner plastic boxes that had blood seepage from the cracked tubes were placed in plastic bags that were heat sealed. The inner plastic boxes and tubes were returned to their respective cardboard boxes which were sealed with evidence tape. Property and Evidence was informed that some of the kits contain broken blood tubes to make them aware of the potential exposure hazard.