

## CITY OF COLORADO SPRINGS

# MEMORANDUM

DATE: December 9, 2009  
TO: Senior Forensic Chemist Bobby Striebel  
Forensic Chemist Marcie Jardell  
Forensic Chemist Stefanie McMillen  
Office Specialist Jerry Gibson  
FROM: Ian Fitch, Crime Lab Supervisor/Quality Assurance Manager  
SUBJECT: New Policies and Procedures for Performing Blood Alcohol Analyses and Reviewing the Results

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### Introduction:

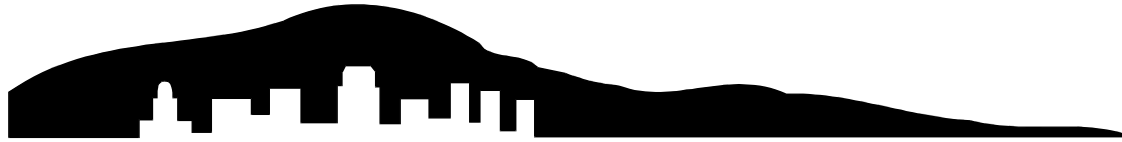
As the Metro Crime Lab's Forensic Chemistry unit proceeds with blood alcohol analyses following the discovery that some previously reported casework results were inaccurate (see Corrective Action Report #004), the lab will implement new policies and procedures to ensure that the nonconformance discussed in CAR #004 does not recur in the future.

A root cause analysis investigation, which included input from Colorado Bureau of Investigation (CBI) Agent Tim McKibbin, strongly suggested that the high blood alcohol content values reported in the previously affected cases resulted from a discrepancy between the concentration of internal standard, N-Propanol, added to the standard curve components (standards) and purchased controls (controls), and that added to the unknown blood samples being tested. Evidence suggests that in batches affected by the nonconformance in question, less N-Propanol was added to the unknown blood samples than to the standards/controls. This would explain the inaccurate high ethanol values reported, since the amount of ethanol is calculated relative to the N-Propanol.

### Policies and Procedures:

Policy #1: A Forensic Chemist performing blood alcohol analysis, will prepare the internal standard (N-Propanol) and aliquot it for the standards/controls and for the unknown blood samples simultaneously.

Procedure #1: This will be achieved by diluting the internal standard to the appropriate concentration, mixing thoroughly, and allowing it to equilibrate for NO LESS THAN 30 MINUTES prior to aliquoting. 2 mL of diluted internal standard will then be aliquoted into ALL OF THE SAMPLING vials using a repeater pipette, preparing vials for both standards/controls and unknown blood



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samples. This will ensure that the concentration of internal standard is approximately equal for all samples to be analyzed.

Policy #2: The Forensic Chemist performing the analysis and the technical reviewer will ensure that the amount of internal standard added to the standards/controls is equivalent to that added to the unknown blood samples.

Procedure #2: The area counts of the internal standards (N-Propanol) for all samples run in a batch will be tabulated in a spreadsheet. The mean count for all of the standards/controls will be derived, and the mean count for all of the unknown blood samples will similarly be derived, and a percentage difference will be documented on the same spreadsheet. The spreadsheet will be generated by the analyzing Forensic Chemist or Office Specialist, and checked during the technical review process. Both individuals will initial and date the spreadsheet which will be kept in the sequence log for the batch in question. If this difference is less than 10%, the results will be reported out with confidence. If the difference is greater than 10%, the Senior Forensic Chemist will be informed, and some or all of the blood samples in a batch will be re-tested by a second Forensic Chemist.

These new policies and procedures will be implemented as of 12/2/09.