Verification of Quantitative Methods

Purpose	**To show that the instrument is fit for use after completion of annual preventative maintenance.**
Analyte	**Ethanol**
Unit of Measure	**g/100 mL**
Lowest Calibrator Concentration	**0.010 g/100mL**
Highest Calibrator Concentration	**0.500 g/100 mL**
Primary Matrix	**Blood**
Secondary Matrices	**Alcoholic Beverages and Other Liquid Specimens**
Analyst Performing Verification Study	**Melissa Henry**
Reviewer	**Kayla Baylor**
Start Date	**January 30, 2024**
Completion Date	**January 30, 2024**
Instrument	**BAC-1**
Method	**BAC.M**

Validation Approval

Analyst: _____
                                                 Date

Reviewer: _____
                                                 Date

Approval Date: February 23, 2024   Issuing Authority: Upper Management
Effective Date: February 26, 2024   Authorized for Distribution by Laboratory Director
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Brazoria County Sheriff's Office Crime Laboratory
Standard Operating Procedure: Laboratory Operations Guide
Subject: Verification of Quantitative Methods

LAB-TOX-12-00

Verification Study — BIAS AND PRECISION

Analyte: **Ethanol**
Units: **g/100 mL**
Instrument: **BAC-1**   **FID1**

Analyst: **Melissa Henry**
Study Dates: **1/30/2024**
Matrix: **Blood**

Batch Name	Run Order	Low QC	Blood QC A	Blood QC B	High QC
Target Concentration (g/100mL):		*0.080*	*0.0778*	*0.1976*	*0.400*
BAC_20240130_MH	1	0.0764	0.0763	0.1926	0.4033
	2	0.0768	0.0763	0.1942	0.4085
	3	0.0774	0.0765	0.1966	0.4159
Within Run	**Mean**	**0.0769**	**0.0764**	**0.1945**	**0.4092**
	SD	**0.0005**	**0.0001**	**0.0020**	**0.0063**
	%CV	**0.65%**	**0.15%**	**1.04%**	**1.55%**
	% Bias	**-3.92%**	**-1.84%**	**-1.59%**	**2.31%**

Comments:

Acceptance Criteria:
%Bias: ≤5% if target concentraton is > 0.05 g/100mL
≤10% if target concentraton is ≤ 0.05 g/100mL
Within-Run %CV ≤10%

Verification Study — BIAS AND PRECISION

Analyte: **Ethanol**
Units: **g/100 mL**
Instrument: **BAC-1**   **FID2**

Analyst: **Melissa Henry**
Study Dates: **1/30/2024**
Matrix: **Blood**

Batch Name	Run Order	Low QC	Blood QC A	Blood QC B	High QC
Target Concentration (g/100mL):		*0.080*	*0.0778*	*0.1976*	*0.400*
BAC_20240130_MH	1	0.0757	0.0759	0.1925	0.4058
	2	0.0764	0.0759	0.1944	0.4112
	3	0.0775	0.0762	0.1971	0.4190
Within Run	**Mean**	**0.0765**	**0.0760**	**0.1947**	**0.4120**
	SD	**0.0009**	**0.0002**	**0.0023**	**0.0066**
	%CV	**1.19%**	**0.23%**	**1.19%**	**1.61%**
	% Bias	**-4.33%**	**-2.31%**	**-1.48%**	**3.00%**

Comments:

Acceptance Criteria:
%Bias: ≤5% if target concentraton is > 0.05 g/100mL
≤10% if target concentraton is ≤ 0.05 g/100mL
Within-Run %CV ≤10%

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Brazoria County Sheriff's Office Crime Laboratory
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LAB-TOX-12-00

SUMMARY OF VALIDATION PERFORMANCE

Analyte: **Ethanol**

Units: **g/100 mL**

Instrument: **BAC-1**

Analyst: **Melissa Henry**

Study Dates: **1/30/2024**

Matrix: **Blood**

Failed Runs (include dates/reasons):

Date	Reason
N/A	N/A

Deviations from SOP: N/A

Notes: N/A

Conclusion: **BAC-1 is fit for analysis of ethanol casework.**

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