

TABLE OF CONTENTS

Executive Summary.....	1
Introduction.....	2
Definition of Terms.....	4
History of Source Code Proceedings.....	11
First Request for Discovery of Source Code.....	11
Underdahl I – Minnesota Attorney General’s Request for Writ of Prohibition.....	12
Minnesota Sues CMI, Inc., in United States District Court.....	14
Intervention by Criminal Defendants and Implied Consent Petitioners.....	15
Details of Consent Judgment and Permanent Injunction.....	17
Underdahl II – Source Code Discoverable if Minimal Showing Made.....	19
Adoption of Discovery Request by Criminal Defense and Implied Consent Petitioner Bar.....	20
First Judicial District Assignment.....	22
Master Files.....	23
Decision to Proceed under Assigned Case Method.....	23
Method of Access to Source Code.....	24
Inquiry Pursuant to Rule 104 of the Minnesota Rules of Evidence.....	25
Case Management Orders.....	26
Statewide Assignment by Chief Justice of Minnesota Supreme Court.....	28
Nature of Statewide Assignment.....	29
Joint United States District Court and Minnesota State District Court Hearing.....	30
Case Management Orders.....	31
Designation of Liaison Counsel.....	32
Procedural Process Implemented to Identify and Manage Cases.....	32
Inquiry Pursuant to Rule 104 of the Minnesota Rules of Evidence.....	36
Operation of Source Code in Minnesota’s Intoxilyzer 5000EN.....	37
Scientific Methods and Principles of Measurement.....	38
Basic Principles of Breath Alcohol Concentration Testing.....	38
Infrared Absorption Spectroscopy.....	42
Principles of Measurement.....	43
Hardware and Physical Processes.....	44
Hardware of Intoxilyzer 5000EN.....	45
Gas Paths through Intoxilyzer 5000EN.....	46
Air Blank Path.....	47
Breath Sample Path.....	47

Breath Simulator Solution Path.....	48
Test Sequences of Intoxilyzer 5000EN	49
ACA.....	50
ABA.....	50
DABACABA	51
Source Code and Role Served in Intoxilyzer 5000EN.....	54
Air Blank Data Collection and Calculation.....	56
Control Data Collection and Calculation	57
Sample Data Collection.....	57
Sample Acceptance Criteria.....	59
Flow Rate.....	59
Volume.....	61
Slope Check	63
Time.....	65
Additional Selected Error Codes	66
Instrument Problems.....	66
Sampling Issues	67
Analysis of the Results	70
The Evidentiary Hearing	72
Criticisms of the Source Code	74
Timothy Black.....	74
Self-Test Procedures	78
RFI Antenna	78
Drift.....	79
Air Volume and Pressure Measurements.....	80
RFI	83
Programming Protocol.....	85
Dr. Karl Schubert.....	86
Standard Deviation	86
Request for Proposal	86
Gullberg Article.....	87
Sample Acceptance Source Code.....	90
Mary Catherine McMurray.....	93
Supporters of the Source Code	95
BCA Witnesses	95
Karin Kierzek	95
Patrick Pulju.....	99

David Edin.....	104
Matthew Willis	106
Dr. Steven Nuspl	108
Conclusion.....	114