DataMaster DMT Operating Protocol

July 2006

DataMaster DMT ®

NPAS - Mansfield, OH

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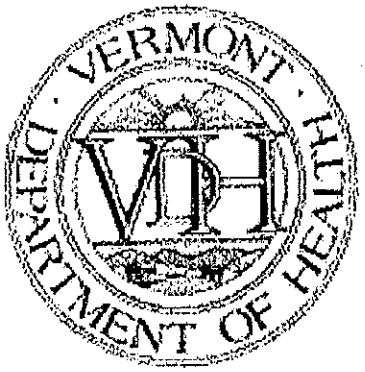


Department of Health seal. This should be on every report that the DataMaster DMT prints out. An electronic copy is available.

This is the Vermont Coat of Arms and should be on every subject test ticket that the DataMaster DMT prints out. An electronic copy is available.

Password Protected Options

Operator Options

- Run DUI, 0.02 or Check-In tests
- Reprint Ticket
-

Supervisor Options

- All options available at Operator level
- Routine Performance Check
- Diagnostic Test
- Accuracy and Precision Check
- Administration (ex. Downloads, Discoveries etc.)
- Print Calibration Factors
- Change Date Time
- Read-only diagnostic screen
- Sample Acceptance Test

Technician Options

- All options available at Operator and Supervisor levels
- Calibration
- Certification
- Installation
- Annual Preventative Maintenance
- Diagnostic Screen

Administrative Options

- Reprint Ticket
- Download
- Discovery Archive

DMT Operation Sequence

Press Here to begin 15 min observation period

<Countdown clock HH:MM>

Press here to restart clock

Reason for restart: (40 Characters)-

"Ready Push Run"

O DUI O 0.02 Test O Check-In Confirmation

Ø DUI

Subject Information:

Subject Name First (15) MI Last (20)
DOB mm/dd/yyyy <Age years>
Sex M/F
License # (15 Characters) State ←Optional Fields

Incident Information:

Case # (15 Characters)
Reason for test *O Crash* *O Checkpoint* *O Stop* *O Other*
Time of Operation HH:MM
Location of Incident (40) ←Optional Field
Town: Drop down menu of towns (see page ## for list)
County: Field automatically filled based on town (see page ## for list)

Info in italics is recorded but not printed on ticket

Test Operator Information:

Name First (15) MI Last (20)
Agency Drop down menu of agencies (see page ## for list)
VTC # (10)

Press "Okay" when complete
<Information comes up for review>
Press "Edit" or "Continue"

"Edit" will loop back to information entry page, "Continue" will begin test sequence

Subject take test? "Y" "N"
If "Y" test sequence begins
If N Reason for refusal? O Refusal O Incapable: (40 characters)
<Refusal ticket is printed>
Test Sequence:
- Blank
- Internal Standard
- Simulator Vapor
- Blank
- Subject Sample

Will subject provide 2nd sample? "Y" "N"
If "N" <Evidence ticket is printed>
If "Y"
- Blank
- Internal Standard
- Simulated Vapor
- Blank
- Subject Sample

<3 Copies of Evidence Ticket are printed>

Sequence will begin after information is entered and countdown clock reaches 00:00

External Simulator Concentration must be within 5% of known value as calculated during sim solution change

- Graph each try if "incomplete sample"
- Print final volume of air for each acceptable sample
- Certification date on ticket
- Installation date on ticket
- Simulator solution value and 5% range on ticket
- Simulator temperature on ticket
- See Page ## for ticket example

Press Here to begin 15 min observation period

<Countdown clock HH:MM>

Press here to restart clock

Reason for restart: (40 Characters)-

Ø 0.02 Test

Subject Information:

Subject Name First (15) MI Last (20)
DOB mm/dd/yyyy <Age years>
Sex M/F
License # (15 Characters) State ←Optional Field
Guardian Present? Y/N **←Pops up if age <18**

Incident Information:

Case # (15 Characters)
Reason for test *O Crash* *O Checkpoint* *O Disorderly Conduct* *O Stop* *O Party* *O Other*
Time of Incident HH:MM
Location of Incident (40) ←Optional Field
Town: Drop down menu of towns(see page ## for list)
County: Field filled based on town(see page ## for list)

Info in italics is recorded but not printed on ticket

Test Operator Information:

Name First (15) MI Last (20)
Agency Drop down menu of agencies (see page ## for list)
VTC # (10)

Press "Okay" when complete
<Information comes up for review>
Press "Edit" or "Continue"

"Edit" will loop back to information entry page. "Continue" will begin test sequence

Subject take test? "Y" "N"
If "Y" test sequence begins
If N Reason for refusal? O Refusal O Incapable: (40 characters)
<Refusal ticket is printed>

Sequence will begin after information is entered and countdown clock reaches 00:00

Test Sequence:

Blank
Internal Standard
Simulator Vapor
Blank
Subject Sample

External Simulator Concentration must be within 5% of known value as calculated during sim solution change

<3 Copies of Evidence Ticket are printed>

- Graph each try if "incomplete sample"
- Print final volume of air for each acceptable sample
- Certification date on ticket
- Installation date on ticket
- Certified simulator solution value and 5% range on ticket
- Simulator temperature on ticket
- See Page ## for ticket example

Ø Check-In Confirmation

Subject Information:

Subject Name ___First (15)_____ MI __Last (20)___
DOB mm/dd/yyyy <Age years>
Sex M/F
License # _(15 Characters)_ State ___ ←Optional Fields

Test Operator Information:

Name ___First (15)_____ MI __Last (20)___
Agency Drop down menu of agencies (see page ## for list)
VTC # _(10)_

Info in italics is recorded but not printed on ticket

Press "Okay" when complete
<Information comes up for review>
Press "Edit" or "Continue"

"Edit" will loop back to information entry page, "Continue" will begin test sequence

Test Sequence:
- Blank
- Internal Standard
- Simulator Vapor
- Blank
- Subject Sample

<3 Copies of Evidence Ticket are printed>

External Simulator Concentration must be within 5% of known value as calculated during sim solution change

- Graph each try if "incomplete sample"
- Print final volume of air for each acceptable sample
- Certification date on ticket
- Installation date on ticket
- Certified simulator solution value and 5% range on ticket
- Simulator temperature on ticket
- See Page ## for ticket example

DUI Subject Test

State of Vermont

<Agency Name> <Serial Number>

Certification Date: MM/DD/YYYY Install Date: MM/DD/YYYY

Date: MM/DD/YYYY
Time: HH:MM

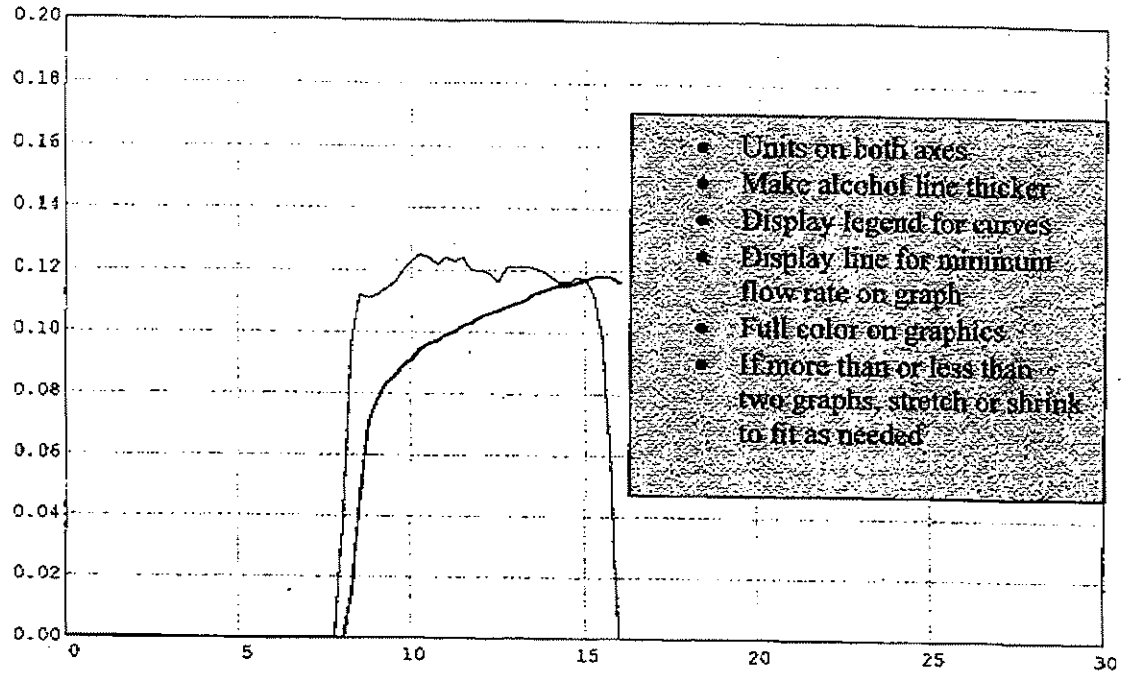
Subject Name: First M Last
Date of Birth: MM/DD/YYYY Age: ##
Sex: M/F
License # _____ State

Case # _____
Time of Operation: HH:MM
Location of Incident: _____
Town: _____
County: _____

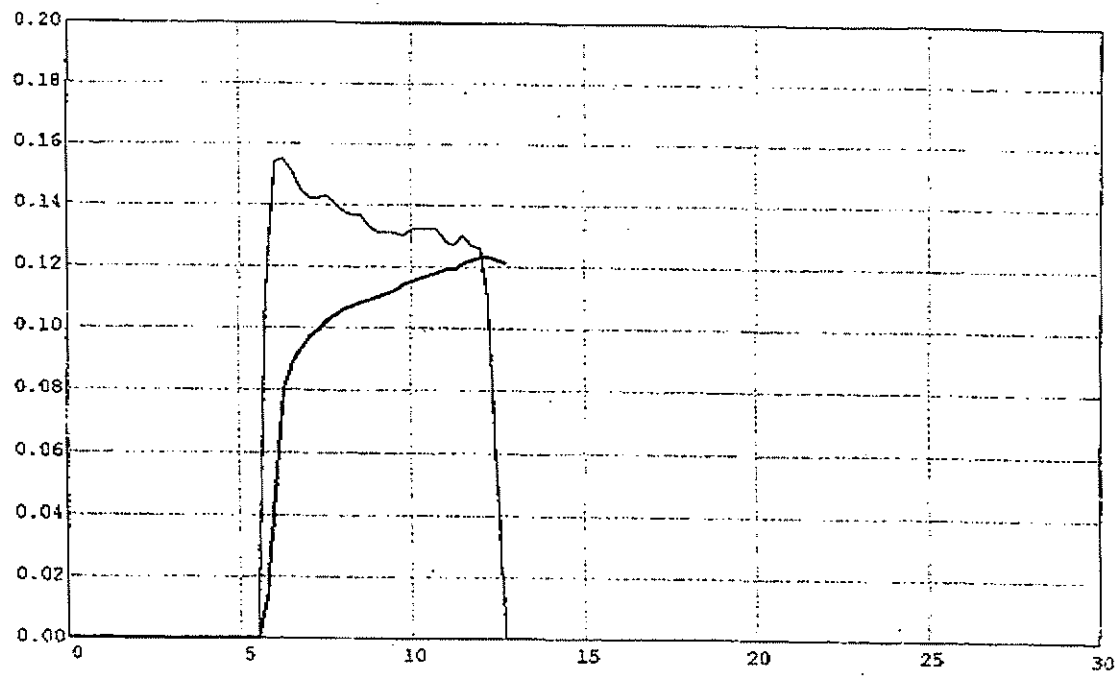
Test Operator Name: First M Last
Agency: _____

Observation Period Start Time:			HH:MM
Blank Test	0.000		
Internal Standard	PASSED		
Simulated Vapor	0.100g/210L		
Blank Test	0.000		
Subject Sample	x.xxx g/210L	Vol 1.5L	HH:MM
Internal Standard	PASSED		
Simulated Vapor	0.100g/210L		
Blank Test	0.000		
Subject Sample	x.xxxg/210L	Vol 1.5L	HH:MM

Sim Vapor Initial Concentration = 0.100 g/210L Sim Temp T°C



- Units on both axes
- Make alcohol line thicker
- Display legend for curves
- Display line for minimum flow rate on graph
- Full color on graphics
- If more than or less than two graphs, stretch or shrink to fit as needed



0.02 Subject Test

State of Vermont

<Agency Name> <Serial Number>

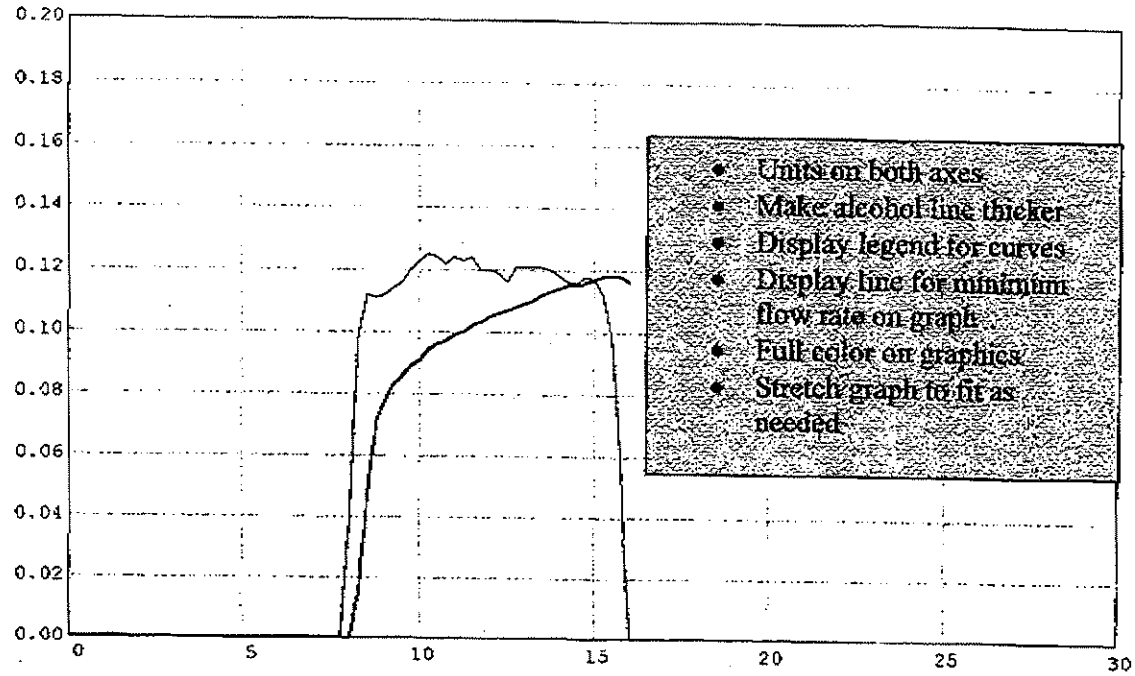
Certification Date: MM/DD/YYYY Install Date: MM/DD/YYYY

Date: MM/DD/YYYY
Time: HH:MM

Subject Name:	First M Last
Date of Birth:	MM/DD/YYYY Age: ##
Sex:	M/F
License #	_____ State
Guardian Present	Y/N *(only if <18)*
Case #	_____
Time of Incident:	HH:MM
Location of Incident:	_____
Town:	_____
County:	_____
Test Operator Name:	First M Last
Agency:	_____

Observation Period Start Time:			HH:MM
Blank Test	0.000		
Internal Standard	PASSED		
Simulated Vapor	0.100g/210L		
Blank Test	0.000		
Subject Sample	x.xxx g/210L	Vol 1.5L	HH:MM

Sim Vapor Initial Concentration = **0.100 g/210L** Sim Temp **T°C**



Check-In Confirmation Test

State of Vermont

<Agency Name> <Serial Number>

Certification Date: MM/DD/YYYY Install Date: MM/DD/YYYY

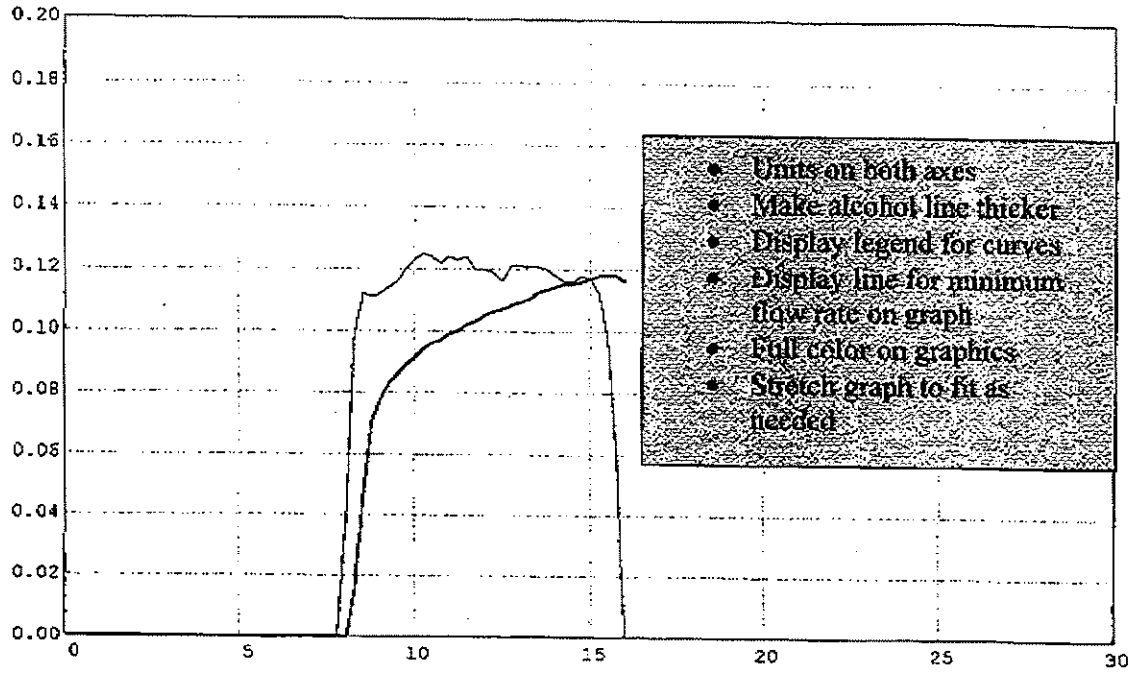
Date: MM/DD/YYYY
Time: HH:MM

Subject Name: First M Last
Date of Birth: MM/DD/YYYY Age: ##
Sex: M/F
License # _____ State

Test Operator Name: First M Last
Agency: _____

Blank Test 0.000
Internal Standard PASSED
Simulated Vapor 0.100g/210L
Blank Test 0.000
Subject Sample x.xxx g/210L Vol 1.5L HH:MM

Sim Vapor Initial Concentration = **0.100 g/210L** Sim Temp **T°C**



Calibration Protocol for DataMaster DMT

This protocol will be available as an option under the DataMaster Technician level password.

DataMaster Technician will select the option for Calibration.

1) Enter Technician Name: First (15) MI Last (20)

2) Enter New Simulator Solution Information: 0.XXXg/210L Lot: XX-XX-XXX

Instrument will calculate a 5% acceptance range

3) "Connect Water Simulator" "Press Enter"
   a. <Sample is analyzed>

4) "Disconnect Water Simulator" "Press Enter"
   a. <Purge>

5) "Connect ~0.1g/210L EtOH Simulator" "Press Enter"
   a. <Sample is analyzed>

6) "Disconnect ~0.1g/210L EtOH Simulator" "Press Enter"
   a. <Purge>

7) "Save Calibration?" "Y" "N"
   a. If "Y" print calibration factors *(see next page for example)*
   b. If "N" "Recalibrate?" "Y" "N"
      i. If "Y" start again from step 3
      ii. If "N" abort

CALIBRATION REPORT
DataMaster DMT: ***Serial #***

Certification Date:	**MM/DD/YYYY**
Calibration Date:	**MM/DD/YYYY**
Current Date:	**MM/DD/YYYY**
Time:	**HH:MM**
Calibrated by:	**First MI Last**
Printed by:	**First MI Last**

b1	=	0.0001149
b2	=	0.009021
b3	=	0.001504
Xq	=	0.115152
Ca	=	0.100000
CAL	=	1.026056
a21	=	1.194209
a31	=	0.639356

Certification Protocol for DataMaster DMT

This protocol will be available as an option under the DataMaster Technician level password.

DataMaster Technician will select the option for Certification

1) Enter Technician Name: First (15)____ MI _ Last (20)___

2) Run Diagnostic Check
   <Print Diagnostic Test> *(see page ## for Diagnostic Test Print Out)*

5) "Begin Linearity Check: Attach External Simulator with EtOH free water"
   Press enter when complete
   <Purge>
   <Blank>
   <7 replicates> *Purge between each sample*

6) "Linearity Check: Attach External Simulator with first EtOH concentration"
   "Press enter when complete"

7) "Enter Simulator Solution Information"
   0.XXXg/210L | Acceptance Range +/-0.XXXg/210L | Lot: XX-XX-XXX
   <Purge>
   <Blank>
   <7 replicates> *Purge between each sample*

8) "Linearity Check: Attach External Simulator with second EtOH concentration"
   "Press enter when complete"

9) "Enter Simulator Solution Information"
   0.XXXg/210L | Acceptance Range +/-0.XXXg/210L | Lot: XX-XX-XXX
   <Purge>
   <Blank>
   <7 replicates> *Purge between each sample*

10) "Linearity Check: Attach External Simulator with third EtOH concentration"
    "Press enter when complete"

11) "Enter Simulator Solution Information"
    0.XXXg/210L | Acceptance Range +/-0.XXXg/210L | Lot: XX-XX-XXX
    <Purge>
    <Blank>
    <7 replicates> *Purge between each sample*

12) "Linearity Check: Attach External Simulator with fourth EtOH concentration"
    "Press enter when complete"

13) "Enter Simulator Solution Information"
    0.XXXg/210L | Acceptance Range +/-0.XXXg/210L | Lot: XX-XX-XXX
    <Purge>
    <Blank>
    <7 replicates> *Purge between each sample*

Instrument will plot and print a graph of the known external simulator solution values vs. the calculated external simulator values. The slope of the line and R^2 values will print on graph. If R^2 is not >0.995, instrument will ask to try again or abort.

7 replicates of the simulator solution will be performed. Average concentration must be within acceptable range. Standard deviation must be between 0 and 0.0022 for acceptable test. A standard deviation of greater than 0.0022 or an average outside of acceptable range will result in a failed solution. After a failed solution operator will have option to retry solution or abort certification protocol.

While Linearity Test is running, display all results on screen.

A technician must have ability to exit and save at any time during the Certification process and can restart where they left off.

14) "Options Check: Reset options to default? Press enter to complete reset"
<Print options> *(see page ## for Options List)*

15) "Begin Acetone Interference Test"
<Purge>
<Blank>
"Please Blow"
"Interference detected" *(If no interference detected restart Acetone Test or operator abort)*
<Purge>

16) "Begin Mouth Alcohol Test"
<Blank>
"Please Blow"
"Invalid Sample" *(if no mouth alcohol is detected, restart mouth alcohol test or operator abort)*
<Purge>

17) "Attach ~0.1g/210L Simulator Vapor"
18) Enter New Simulator Solution Information: 0.XXXg/210L Lot: XX-XX-XXX

Instrument will calculate a 5% acceptance range

19) "Begin Sample Acceptance Test"
"Press "Enter" when Ready"
<Blank>
<Simulator Vapor>
<Purge>
"Please Blow"

Forcing the Technician to hit enter will ensure that they are ready to continue.

20) Provide Shallow Breath

21) Provide Intermittent Breath

22) Perform Suck Back Test

Each breath instruction will display on screen for 15 seconds. Technician may work at their own pace. Test sequence is complete when a valid alcohol free test is obtained.

23) Provide valid Alcohol Free Test.

The valid test must meet all requirements of a subject sample to be deemed acceptable. A test of 0.002 or higher should generate a message indicating that the Technician should try again. If a valid test cannot be obtained, operator abort.

24) Did Instrument Pass All Sample Acceptance Checks?
- o Yes
- o No

Reason for Failure? Ex) Instrument allowed shallow breath.

This box should respond immediately to a "NO" answer. 40 character max.

25) Print all reports *(see next page for report format)*

CERTIFICATION REPORT
DataMaster DMT: ***Serial #***
Certification Date: **MM/DD/YYYY**
Calibration Date: **MM/DD/YYYY**
Current Date: **MM/DD/YYYY**
Certified by: **First MI Last**

Diagnostic Test Results

VERSIONS:
DMT X.X
PIC X.X
Questions: X.X
Reports: X.X

TEMPERATURES

Sample Chamber = XX.XXC	(acceptable range XX.XX → XX.XX)
Breath Tube = XX.XXC	(acceptable range XX.XX → XX.XX)
Simulator Hoses = XX.XXC	(acceptable range XX.XX → XX.XX)

VOLTAGES

Lamp Voltage = X.XX V	(acceptable range X.XX → X.XX)
Cooler Voltage = X.XX V	(acceptable range X.XX → X.XX)
Bias Voltage = XXX.X V	(acceptable range X.XX → X.XX)
Chopper Frequency = XXX.X Hz	(acceptable range XXX.X → XXX.X)

PUMP TEST
Volume = 0.XXX L
Flow Rate = X.XXX L/M

DETECTOR STABILITY TEST

PUMP	ON	OFF
MAX(V)	0.0XXX	0.0XXX
MIN(V)	0.0XXX	0.0XXX

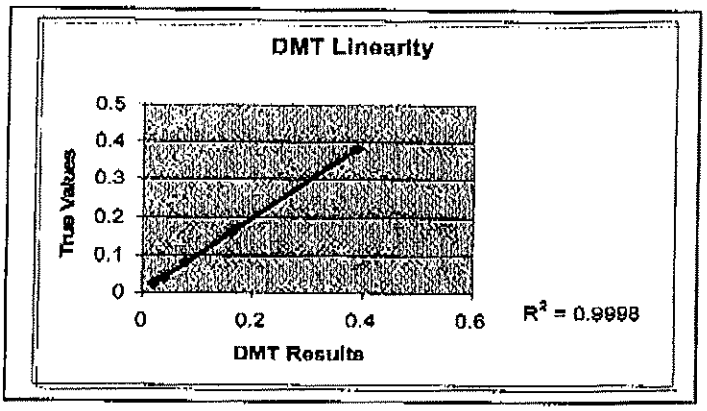
FILTER TEST

Filter 1	0.XXX	zero=true
Filter 2	0.XXX	zero=true
Filter 3	0.XXX	zero=true

INTERNAL STANDARD
Xq = X.XXXX O.XX% (Xq value at Calibration)

Linearity Check Results

True Value	Reported Average	Std Dev
~0.02g/210L	0.02g/210L	0.0002
~0.08g/210L	0.08g/210L	0.0002
~0.16g/210L	0.16g/210L	0.0002
~0.40g/210L	0.40g/210L	0.0002

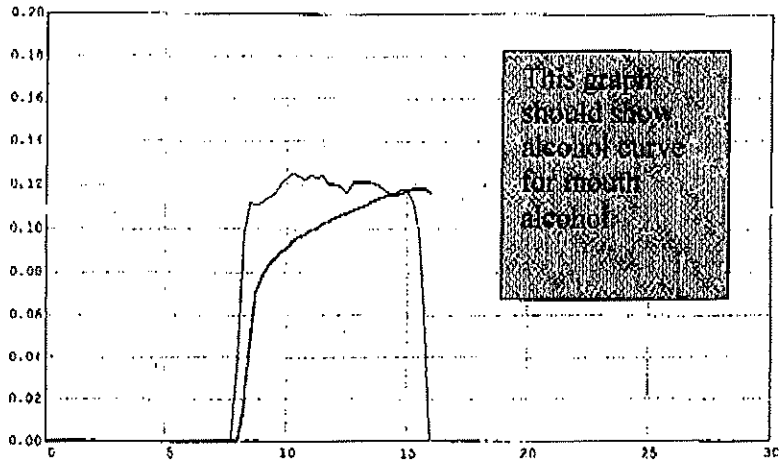


Acetone Interference Test

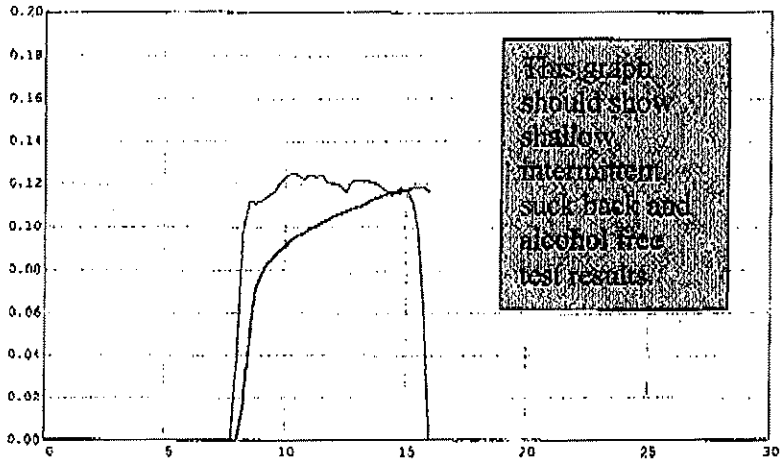
Interference Detected

Mouth Alcohol Test

Invalid Sample Detected



Sample Acceptance Test



Technician Signature _____ **Date** _____

Reviewed by _____ **Date** _____

Install Protocol for DataMaster DMT

This protocol will be available as an option under the Technician level password.

Technician will select the option for Installation

1) Replace Simulator Solution
   Press "Enter" when complete

30 Minute Timer will begin Countdown when "enter" is keyed. This clock will remain on screen in the upper right corner.
MM:SS

2) Enter Simulator Solution Information

0.XXXg/210L

Instrument will calculate a ±5% acceptance criteria from the actual value.

3) Enter Technician Name

John Q Smith

4) Does site meet the specifications in doc #XXX?

- Yes
- No *Install will abort if No is selected*

This box should respond immediately to a "NO" answer. 40 character max.

Reason for noncompliance ex) site under construction

5) Enter Location Identification

Burlington PD

Instrument will now remain idle while 30 minute Timer counts down to zero