

Dan



VERMONT

DEPARTMENT OF HEALTH

**DATAMASTER DMT
INSTRUMENT SUPERVISOR
&
RECORD ADMINISTRATOR
MANUAL**

August 2008

The information provided in this manual is not designed to make the DataMaster DMT Supervisor or Record Administrator an expert on the DataMaster DMT. This manual will familiarize the Supervisor and Record Administrator with the instrument in order to perform simple maintenance and repairs and to provide copies of records as needed. An understanding of mechanics, optics, and electronics is not required to perform simple maintenance and repairs on the DataMaster DMT.

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SECTION I

LOCATION AND PERSONNEL REQUIREMENTS

DATAMASTER DMT LOCATION REQUIREMENTS

Before an instrument can be installed for evidentiary use at a location, the host agency must agree to:

- Provide personnel to be trained as and available to perform the duties of a DataMaster DMT Supervisor and Record Administrator. The Supervisor may assume the duties of the Record Administrator if a second individual is not available.
- Keep a complete record of use and maintenance and, when required, submit copies of records to the Vermont Department of Health Laboratory (VDHL) DataMaster Technical Services for filing.
- Maintain the instrument and surrounding area in which it is installed according to the initial specifications and any subsequent modifications required by the VDHL DataMaster Technical Services.

The Vermont Department of Health may withdraw approval of the use of the DataMaster DMT if it determines that at anytime:

- The host agency has failed to adhere to the VDHL conditions listed above.
- The instrument is being underutilized.
- There are reason(s) which makes the site unsatisfactory for continued DataMaster DMT use.

ACCESS

- The DataMaster DMT should not be accessible to unsupervised, unauthorized persons at any time.
- Access by appropriate VDHL personnel and certified law enforcement officers for maintenance and processing DUI subjects should be allowed 24 hours a day seven days a week.
- Only VDHL trained DataMaster DMT Supervisors and designated VDHL personnel may perform maintenance on the instrument.

CLEANING and VENTILATION

- The instrument and surrounding area should be kept clean with little or no dust or dirt accumulation. The instrument cover and supporting surface may be cleaned with a damp cloth.
- Cleaning supplies, paint, paint supplies and other chemicals should not be stored near the instrument.
- The room should have adequate ventilation to facilitate cooling of the instrument and minimize the presence of potentially interfering substances.
- Nothing should be placed behind or around the instrument that would obstruct ventilation of the instrument.
- Beverages or other liquids should not be placed on or in the immediate area of the instrument.

MOVING AN INSTRUMENT

- Contact VDHL DataMaster Technical Services.

POWER REQUIREMENTS

- Power to the DataMaster DMT should be provided from a dedicated 15 amp minimum, grounded, 120 VAC \pm 5% line which operates at a frequency of 60HZ.
- The DataMaster DMT is to be plugged into the VDHL supplied line conditioner or an approved uninterruptible power supply (UPS).

SUPPORTING SURFACE

- The supporting surface should be solid and level and at a comfortable working height for operators.
- Minimum surface dimensions should be 36 inches wide by 24 inches deep to support the instrument and accompanying printer.
- VDHL may require that the instrument be bolted to the supporting surface.

STORAGE SPACE

- Adequate storage space for logbooks and processing supplies should be provided close to the instrument.

TELEPHONE ACCESS

- VDHL highly recommends that a dedicated phone line be connected to the DataMaster DMT. This would allow VDHL DataMaster Technical Services remote access to the instrument.
- An existing phone line cannot go through dispatch, a switchboard, or be transferred.
- Contact VDHL DataMaster Technical Services for more information and specifications.

TEMPERATURE REQUIREMENTS

- The room temperature should be maintained between 65°F and 78°F while using the DataMaster DMT.
- A fan, heater or air conditioner may be used to control the room temperature, however nothing should be blowing directly on the instrument.

ACCESS LEVELS

- Operator Level:** **No Password Required.**
Administer DUI and Check-In breath tests.
Copy last breath report generated.
- Administrator Level:** **Password Required.**
Access to all options available to an Operator.
Reprint breath reports not accessible when using the copy button.
Print copies of reports in response to discovery requests.
Generate "Summary Reports".
Export data as needed.
- Supervisor Level:** **Password Required.**
Access to all options available to Operators and Administrators.
Perform "Simulator Solution Change".
Perform "Routine Performance Check".
Set Date and Time.
Perform "Diagnostic Test".
Perform "Accuracy and Precision Test".
View read-only Technician Screen.
Purge the Sample Chamber
Remove/Return instrument to service
- Technician Level:** **Only available to VDHL DataMaster Technical Services.**

LOG ON / LOG OFF PROCEDURE

LOG ON:

1. Tap the screen to deactivate the screen saver.
2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
3. Select "Security" → "Enter Password".
4. Enter password.

LOG OFF:

1. Tap the screen to deactivate the screen saver.
2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
3. Select "Security" → "Log Off".

DUTIES OF THE DATAMASTER DMT RECORD ADMINISTRATOR

DataMaster DMT Record Administrators will not be responsible for, or trained in maintenance or repairs on the DataMaster DMT.

REPRINT COPIES OF BREATH REPORTS

- If no other tests have been run, memory was not full, memory was not lost or the instrument was not turned off, an exact duplicate of the last test performed may be reprinted by pressing the "COPY" button. This button is available to all operators.
- Record Administrators may retrieve previous evidentiary breath reports by accessing the "Reports" menu. Breath reports are sorted by date and time.
- For additional information regarding how to reprint breath reports see page 11.

RESPOND TO DISCOVERY REQUESTS

- DataMaster DMT Record Administrators are responsible for responding to discovery requests and providing materials as required.
- Some agencies may be required by their State's Attorney's Office to perform monthly updates regarding instrument status. This would include copies of logbooks, reports generated, instrument status and breath record summary reports and other discoverable materials.
- For additional information regarding processing discovery requests and monthly updates see page 11.

DOWNLOAD OR EXPORT DATA

- DataMaster DMT Record Administrators may periodically be requested to manually export data from the DMT. This request would come from VDHL Technical Services and therefore will come with instructions.

DUTIES OF THE DATAMASTER DMT SUPERVISOR

DataMaster DMT Supervisors may also assume the duties of a Record Administrator if another individual is not available.

MAINTAIN REPORTS, RECORDS AND LOGS

- The DataMaster DMT Supervisor will ensure the following logbooks provided by the VDHL Alcohol Program are kept complete:
 - Operator Use Logbook [ALC 603].
 - Check Up and Maintenance Logbook [ALC 803].
- The Supervisor will ensure all generated reports are filed in a secure location and/or kept with the Check Up and Maintenance Logbook.

MAINTAIN INSTRUMENT SECURITY

- The supervisory functions of the DataMaster DMT should not be accessible to unauthorized persons at any time.
- Do not give out password, security screwdriver or simulator key.

PERFORM SIMPLE MAINTENANCE

- Perform Simulator Solution Change when necessary (see page 14).
- Replace printer ink cartridges and paper.
- Correct date and/or time discrepancies (see page 18).
- Repair or correct errors and problems as needed (see Section V page 25).

PERFORM ROUTINE PERFORMANCE CHECK

- The DataMaster DMT Supervisor shall perform Routine Performance Checks during the months of **February, June, and October** of each year.
- For additional instructions concerning the Routine Performance Check (RPC) see page 15.

MAINTAIN DATAMASTER SUPPLIES

- In January of each year, each DataMaster location will receive a shipment of supplies containing mouthpieces, simulator solution, etc.
- In October of each year, all empty or expired bottles of solution should be returned to VDHL using the VDHL addressed label provided.
- Additional DataMaster mouthpieces and simulator solution may be obtained by contacting VDHL DataMaster Technical Services. A shipment will be sent within 5 working days.
- Do not stockpile DataMaster supplies.

SUPPORT DATAMASTER OPERATORS

- Assisting DataMaster Operators: Refer to the *Infrared Breath Testing Device Student Manual DataMaster DMT Addendum*.

VDHL DATAMASTER TECHNICAL SERVICES NOTIFICATION TIME FRAMES:

- VDHL DataMaster Technical Services should be notified as soon as possible of any service needs.
- Two weeks advance notice should be given if there is a need to move an instrument beyond the length of the power cord.
- Two weeks advanced notice should be given if building renovations will result in modification to an existing DataMaster location.
- Personnel changes such as a new Commanding Officer, DataMaster DMT Supervisor or Record Administrator should be reported within 4 weeks of the change.

- In the event of an emergency or a natural disaster (e.g. Flood, extreme cold, major building damage, etc.), if the DMT can be moved without compromising safety, please move instrument to a secure location.

SECTION II

RECORD ADMINISTRATION

REPRINTING SUBJECT TESTS

1. Tap the screen to deactivate the screen saver.
2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
3. Select "Reports".
4. Enter password.
5. On the right side of the screen, scroll down to "Breath Records"
6. Tap the symbol next to "Breath Records" to open the drop-down list of breath reports. Breath reports are sorted by date and time.
7. Open the report(s) for the date in question by tapping the next to the date.
8. Select the desired breath report by highlighting the time on the right side of the screen. The report highlighted will be displayed on the left side of the screen.
9. When you have selected the breath report in question, press "Print".
10. Exit and Log off.

PROCESSING MONTHLY UPDATES AND DISCOVERY REQUESTS

- Some agencies may be required by their State's Attorney's Office to provide monthly updates regarding instrument status. This would include copies of logbooks, maintenance reports, instrument status and breath record summary reports and other discoverable materials generated over the previous month.
- If your agency provides monthly updates and you receive a discovery request, refer the requestor to the State's Attorney's Office for copies of documents.
- If your agency does not provide monthly updates or if a discovery request includes information generated subsequent to the last monthly update provide only the materials specifically requested.
- **Instructions to reprint and generate copies of all available documents:**
 1. Tap the screen to deactivate the screen saver.
 2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select "Reports".
 4. Enter password.
 5. To generate Summary Reports:
 - a. Tap the DataMaster DMT logo in the top left corner of the reports screen to open the summary reports drop-down menu.
 - b. Select "Breath Test Summary".
 - c. Uncheck the "All Dates" box.
 - d. Enter the dates for the data range to be printed.

- e. Press "Print".
 - f. Repeat steps b. through e. for the "Status Summary" report.
6. Simulator Solution Changes, Routine Performance Checks, or Annual Preventative Maintenance Checks performed on the instrument can be reprinted from the DMT or photocopied from your onsite DMT maintenance records.
 - a. To print a copy of a report from the DMT, highlight the name of the desired report on the right side on the screen. The desired report should now be displayed on the left side of the screen. Press "Print".
7. When all reports have been printed, Exit and Log Off.
8. Only provide photocopies of the Calibration, Certification and Installation reports from your onsite DMT maintenance records (not electronic copy) as those reports have been reviewed and signed by VDHL staff.
9. Provide photocopies of the Operator Use Logbook [ALC 603] and the Check Up and Maintenance Logbook [ALC 803] as requested.

SECTION III
SUPERVISOR FUNCTIONS

SIMULATOR SOLUTION CHANGE

- When a new simulator solution is added the certified concentration of the solution is entered into the DMT. The instrument will calculate a $\pm 5\%$ acceptance range based on this concentration. If, while running a test, the result is beyond $\pm 5\%$, the instrument will display the error "Standard Out of Range" and will not be useable until such time as the solution has been changed.
- DataMaster DMT Supervisors should periodically check the documented simulator vapor result in the Operator Use Logbook [Alc 603] (under the Ext Std columns). If the solution appears to be nearing the -5% value, the Supervisor should perform a simulator solution change.

A) Changing Simulator Solution:

1. Unplug the simulator. Unlock the arms from around the simulator head.
2. Disconnect the BNC connector and the quick connects from the simulator air ports.
3. Unscrew the simulator head from the simulator jar.
4. Discard the used simulator solution.
5. Using a clean paper towel, carefully wipe the simulator head mechanism and wipe the jar dry.
6. Inspect the simulator O-ring and jar for damage.
7. Pour the new simulator solution into the jar.
8. Replace the simulator head. Ensure the simulator jar is properly threaded to the simulator head. The jar should turn approximately $1\frac{1}{4}$ turns. It should be snug. Do not over tighten.
9. Plug the simulator back in. Ensure the paddle is rotating.
10. Reconnect the BNC connector and reconnect the quick connects on the simulator head to the simulator tower.
11. Lock the arms around the simulator head.
12. Affix one simulator solution label to the simulator head.

Troubleshooting: If the simulator paddle is not rotating, see to page 27: "Simulator Temperature Out of Range" step 3. If the O-ring or jar are damaged, contact VDHL DataMaster Technical Services. Remove the instrument from service until the problem is corrected.

B) Perform the Simulator Solution Change Protocol:

1. Tap the screen to deactivate the screen saver.
2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
3. Select "Protocols" → "Simulator Solution Change".
4. Enter password.
5. Enter your name, the solution concentration and the lot number in the required fields. Press "OK".

6. The DMT will remain idle for 30 minutes while the solution comes to temperature. The instrument will automatically begin its checks once the timer is satisfied.
7. Accuracy and Precision Check.
 - a. Five replicates of the Simulator Vapor will be analyzed.
 - b. The instrument will calculate a $\pm 5\%$ acceptance range of the simulator solution based on the certified value entered. If the average is not within $\pm 5\%$ the DMT will abort the test, see page 26: "Standard Out of Range".
 - c. The calculated standard deviation must be less than 0.002. If it is greater than 0.002 the DMT will abort the test, see page 27: "Standard Deviation Out of Range".
7. Once the Simulator Solution Change is complete the instrument will prompt for the Supervisor's signature. Sign the box and press "Finished" when complete.
 - a. File with your onsite DMT maintenance records. If any failing reports are generated prior to receiving a passing Simulator Solution Change, those should be kept with the passing report.
8. Log Off.
10. Affix the remaining simulator solution label to the Check Up and Maintenance Logbook [Alc 803]. Under the label write "Simulator Solution Change". Date and sign where directed.
10. In the Operators Logbook [Alc 603] write "TEST/Simulator Solution Change" under "Subjects Name" and the average result from the Accuracy and Precision Check under "Ext Std 1".

Troubleshooting: If you experience errors during the Simulator Solution Change Protocol, remove the instrument from service until such time as the problem can be rectified and a passing Simulator Solution Change Protocol can be completed. See Section V: Error Messages and Troubleshooting for more details.

- See Appendix A for an example of a Simulator Solution Change Report.

ROUTINE PERFORMANCE CHECK

- The DataMaster DMT Supervisor shall perform Routine Performance Checks during the months of **February, June, and October** of each year.
- A reminder will be displayed on the DataMaster DMT "Ready, Push Run" screen during the months of February, June and October. The reminder states "Routine Performance Check Now Due".
- If the Routine Performance Check is not completed before the end of the required month, the instrument will automatically be removed from service until such time as a passing RPC is completed. The instrument will display "Routine Performance Check Required".
- Below are instructions for completing a Routine Performance Check:

A) Gather Supplies

1. A bottle of Simulator Solution. Check the label to ensure the solution is not expired.

2. A handheld radio.
3. A mouthpiece.

B) **Change Simulator Solution:** Refer to instructions page 14 step A.

C) **Perform the Routine Performance Check Protocol:**

1. Tap the screen to deactivate the screen saver.
2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
3. Select "Protocols" → Routine Performance Check.
4. Enter password.
5. Enter your name, the solution concentration and the lot number in the required fields. Press OK.
6. The DMT will remain idle for 30 minutes while the solution comes to temperature. The instrument will automatically begin it's checks once the timer is satisfied.
7. Diagnostic Check.
 - a. The instrument will test it's temperatures, settings and voltages to ensure they are within specification.
 - b. If any of the specifications are out of range, the DMT will abort the test.
8. Accuracy and Precision Check.
 - a. Five replicates of the Simulator Vapor will be analyzed.
 - b. The instrument will calculate a $\pm 5\%$ acceptance range of the simulator solution based on the certified value entered. If the average is not within $\pm 5\%$ the DMT will abort the test, see page 26: "Standard Out of Range".
 - c. The calculated standard deviation must be less than 0.002. If it is greater than 0.002 the DMT will abort the test, see page 27: "Standard Deviation Out of Range".
9. Radio Frequency Interference Test.
 - a. A box will appear on the screen saying "RFI Test", "Detector Voltage" and the actual voltage numbers will be displayed.
 - b. If your agency has a console radio, have dispatch key all routinely used frequencies.
 - i. The detector voltage should **NOT** shift by more than 0.003V.
 - If the detector voltage shifts by more than 0.003V and RF Interference is **NOT** detected, press OK to abort the test.
 - ii. The DMT should **NOT** detect RF Interference.
 - If the DMT detects RF Interference it will automatically continue on to the Sample Acceptance Test.
 - Once the RPC Check is complete, perform a Check-In breath test. When the instrument prompts "Please Blow", finish RFI Test by following step c below. Attach the Check-In Report to the RPC Report.

- Note on the RPC Report "Console radio caused RFI".
- c. Key a handheld radio in close proximity to the breath tube.
 - i. The detector voltage should change significantly and the DMT should report RFI Detected.
 - If the detector voltage shifts by more than 0.003V and RF Interference is **NOT** detected, press OK to abort the test. Remove the instrument from service and contact DataMaster Technical Services.
10. Sample Acceptance Test. Press "OK" when you are ready to start the test.
- a. The DMT will run through a series of quality control checks.
 - b. When prompted "Please Blow" and an intermittent tone is heard, insert a new mouthpiece into the breath tube.
 - c. Provide breath samples. The bottom left corner of the screen will display the type of breath to deliver.
 - i. **Shallow Breath Test:** Blow lightly into the mouth piece so that flow is visible on the display, but the tone remains intermittent. The test is considered failed if the DMT accepts a shallow breath.
 - ii. **Intermittent Breath Test:** Blow and stop repeatedly. The test is considered failed if the DMT accepts an intermittent breath.
 - iii. **Suck Back Test:** Inhale gently through the breath tube for two to three seconds. You should feel some slight resistance. The test is considered failed only if the DMT accepts a suck back breath as a valid sample or if while sucking back, alcohol is reported.

NOTE:

- The DMT's breath tube is equipped with a one-way valve. If you suck back extremely hard or blow then suck rapidly, the instrument may display the error message "Suck Back Error". This is **NOT** a failing response.
 - Press "OK" and redo the entire Sample Acceptance Test. If after two attempts the DMT is still displaying "Suck Back Error", perform a third Sample Acceptance Test. During the third attempt, do not perform a Suck Back Test.
 - Note on the RPC Report that a "Suck Back Error" was generated and contact VDHL DataMaster Technical Services.
- iv. **Alcohol Free Test:** Blow normally until at least 1.5L of air has been delivered. The test is considered failed if the result for alcohol was 0.002 g/210L or greater, or if the breath sample was not accepted and at least 1.7L of air has been delivered.
- d. Once the Sample Acceptance test is complete, the instrument will prompt "Did Instrument Pass All Sample Acceptance Checks? Yes/No"
 - i. If all checks passed, select "Yes".
 - ii. If any of the checks failed, select "No". When prompted, type in which check failed and why.

11. Once the RPC is complete the instrument will prompt for the Supervisor's signature. Sign the box and press "Finished" when complete. The report will print in duplicate.
 - a. File one with your onsite DataMaster DMT records. If any failing reports are generated prior to receiving a passing RPC, those should be kept with the passing RPC.
 - b. Send one copy of the RPC Report(s) to VDHL DataMaster Technical Services.
12. Log Off.
13. Affix the remaining simulator solution label to the Check Up and Maintenance Logbook [Alc 803]. Under the label write "Routine Performance Check" or "RPC". Date and sign where indicated.
14. In the Operators Logbook [Alc 603] write "TEST/RPC" under "Subjects Name" and the average result from the Accuracy and Precision Check under "Ext Std 1".

Troubleshooting: If any step in the Routine Performance Check Protocol fails, the instrument will automatically be removed from service. The instrument will remain "Not in service!" until such time as the problem can be rectified and a passing RPC is completed. See Section V page 25: Error Messages and Troubleshooting for more details.

- See Appendix B for an example of a Routine Performance Check Report.

SET DATE AND TIME

- The DataMaster DMT automatically corrects for daylight savings and leap year.
- There are two methods available to change the date or time:
 1. Tap the screen to deactivate the screen saver.
 2. Double tap on the date/time field in the upper right corner of the screen.
 3. Enter password.
 4. A box will pop up allowing you to select the date and adjust the time.
 5. Once complete, press "Apply" to save the settings.
 6. Exit and Log Off.

OR

1. Tap the screen to deactivate the screen saver.
2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
3. Select "Functions" → "Set Date/Time".
4. Enter password.
5. A box will pop up allowing you to select the date and adjust the time.
6. Once complete, press "Apply" to save the settings.
7. Exit and Log Off.

DIAGNOSTIC TEST

- As a method for troubleshooting, the Supervisor may need to perform a Diagnostic Test on the DMT.
- The Diagnostic Test checks software, hardware, optics and mechanical function.
- To perform a Diagnostic Test:
 1. Tap the screen to deactivate the screen saver.
 2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select "Diagnostic".
 4. Enter password.
 5. Once the test is complete and the report prints, Log Off.
- See Appendix C for an example of a Diagnostic Report.

ACCURACY AND PRECISION CHECK

- As a method for troubleshooting, the Supervisor may need to perform an Accuracy and Precision Check on the DMT.
- The Accuracy and Precision Check will run ten replicate samples of the Simulator Vapor and report the average concentration and standard deviation of the results.
- To perform an Accuracy and Precision Check:
 1. Tap the screen to deactivate the screen saver.
 2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select "Accuracy and Precision".
 4. Enter password.
 5. Once the test is complete and the report prints, Log Off.
- See Appendix D for an example of an Accuracy and Precision Check Report.

TECHNICIAN SCREEN

- As a method for troubleshooting, VDHL Technical Services may request the Supervisor to access the Technician Screen and relay information to a Technician.
- The Technician Screen displays voltage, temperature and filter settings for the DMT.
- To access the Technician Screen:
 1. Tap the screen to deactivate the screen saver.
 2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select "Technician Mode".
 4. Enter password.

5. When finished, Exit and Log Off.

PURGE SAMPLE CHAMBER

- As a method for troubleshooting, the Supervisor may need to purge the sample chamber.
- To purge the sample chamber:
 1. Tap the screen to deactivate the screen saver.
 2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select "Functions" → "Purge Sample Chamber".
 4. Enter Password.
 5. Allow the instrument to purge for 1-2 minutes unless otherwise instructed.
 6. Exit and Log Off.

REMOVE FROM SERVICE / RETURN TO SERVICE

- To remove an instrument from service:
 1. Tap the screen to deactivate the screen saver.
 2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select "Functions" → "Remove From Service".
 4. Enter password.
 5. The screen will now display "Not in service!" in the bottom left corner of the screen where "Ready, Push Run" would be.
 6. Log Off.
- To return the instrument to service:
 1. Tap the screen to deactivate the screen saver.
 2. Tap the DataMaster DMT logo in the top left corner of the screen to open the drop-down menu.
 3. Select "Functions" → "Return to Service".
 4. Enter password.
 5. The screen will now display "Ready, Push Run" in the bottom left corner.
 6. Log Off.

SECTION IV

COMPONENTS

EXTERNAL COMPONENTS



Figure 1: Front view of DataMaster DMT

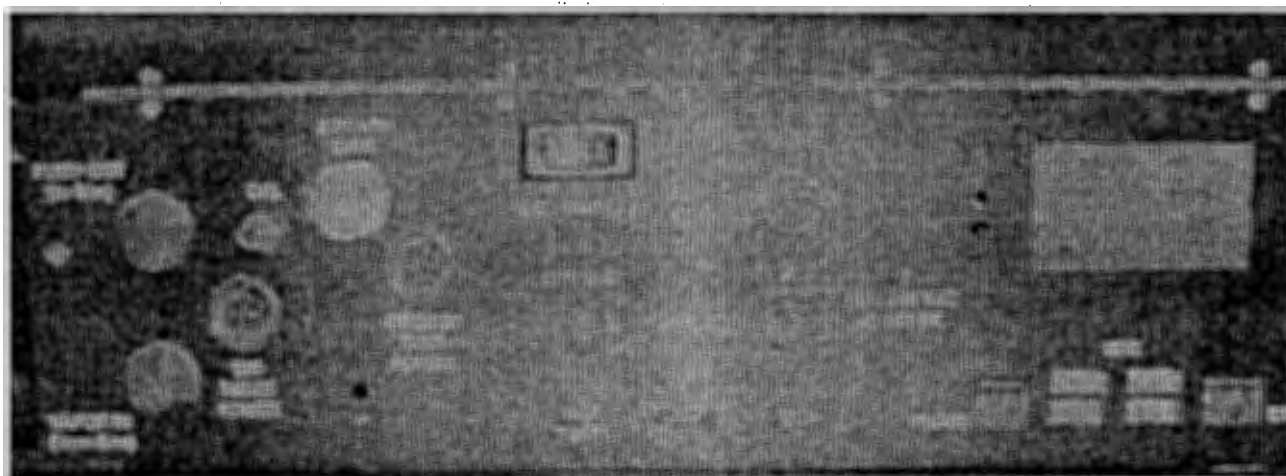


Figure 2: Back view of DataMaster DMT

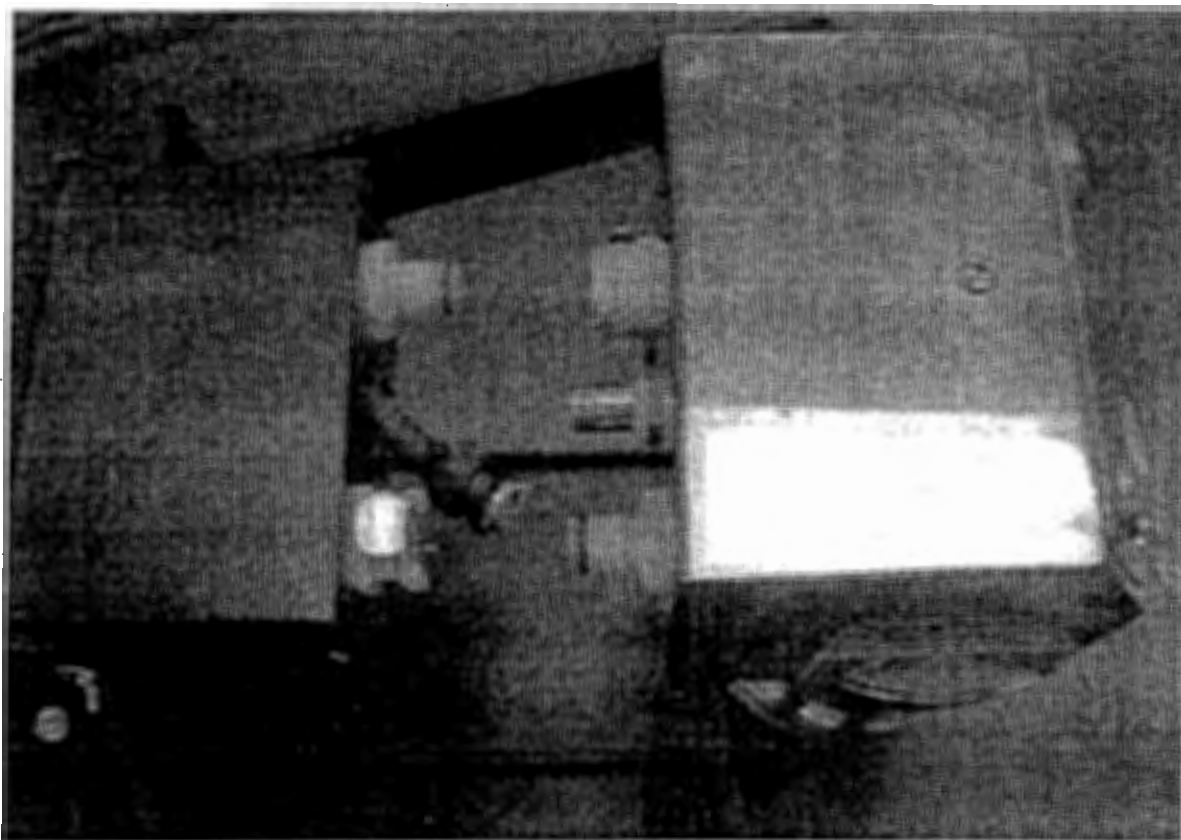


Figure 3: Simulator tower and simulator head quick connects, BNC connector, disconnected.

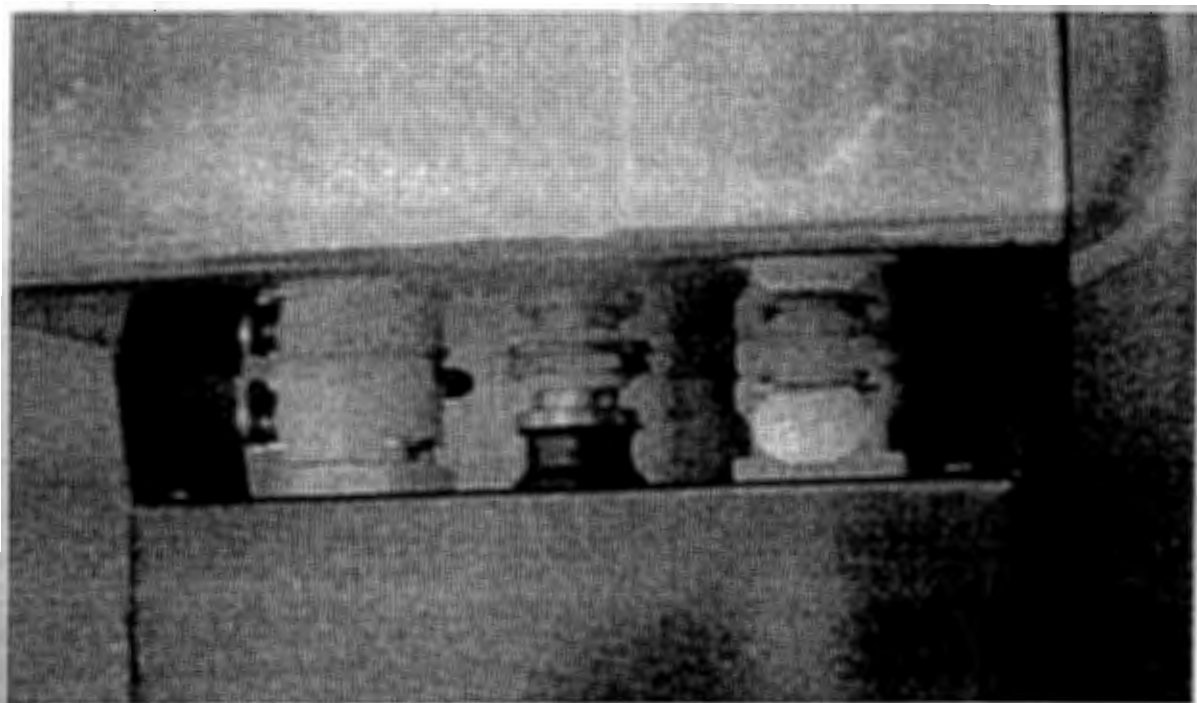


Figure 4: Simulator tower and simulator head quick connects, BNC connector, connected.

INTERNAL COMPONENTS

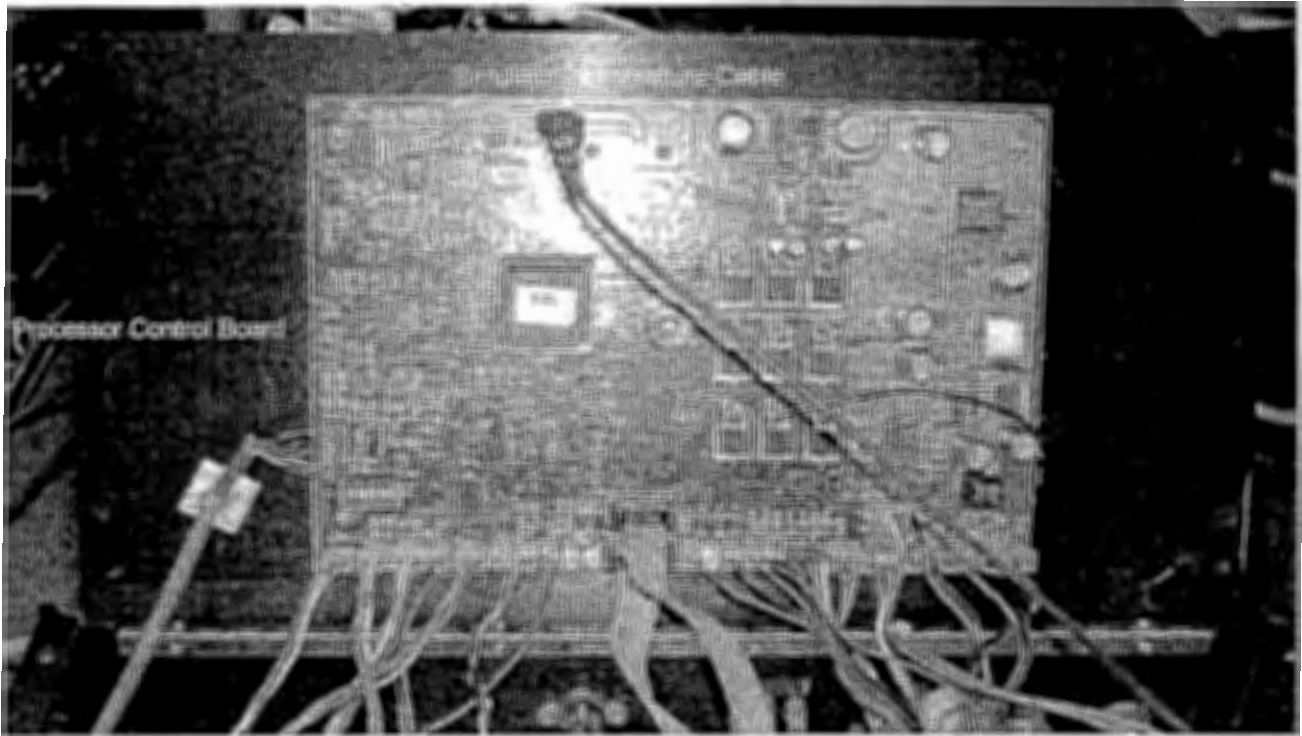


Figure 5: Internal view under lid of DataMaster DMT.

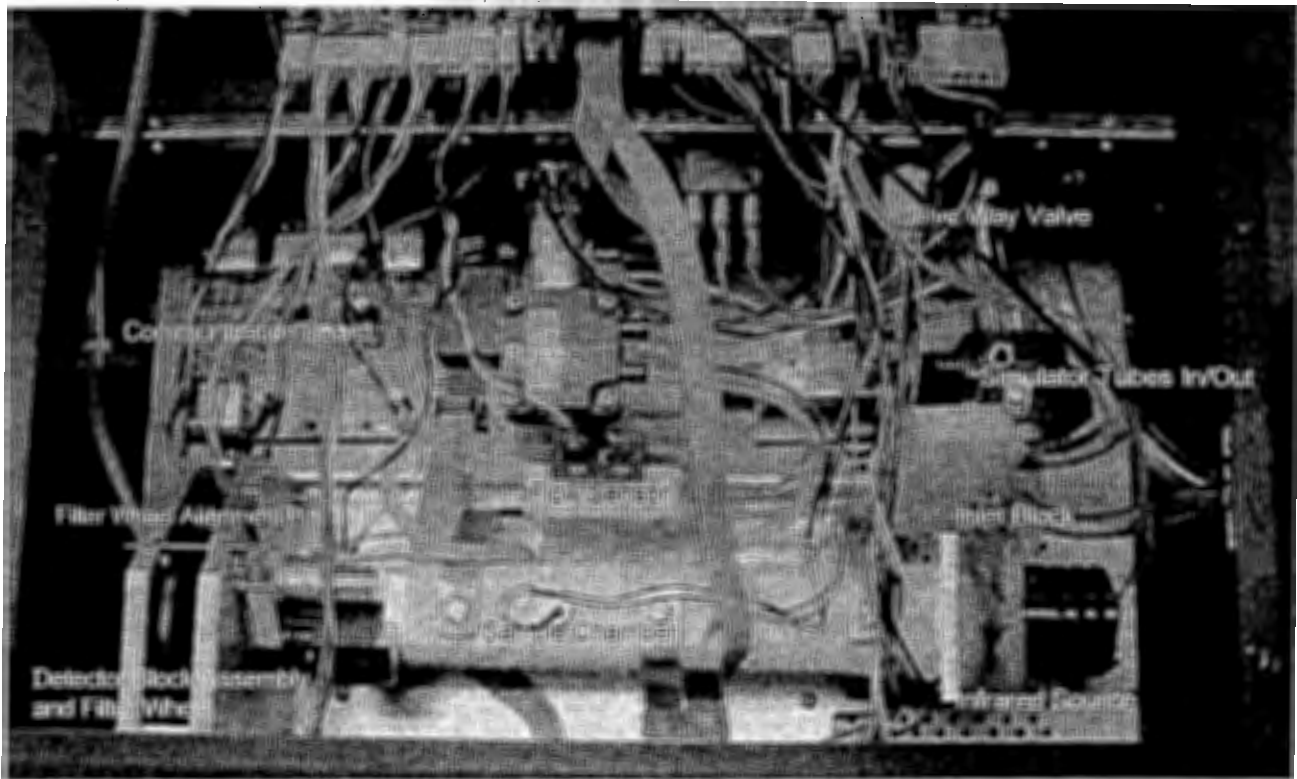


Figure 6: Internal view of DataMaster DMT.

SECTION V

ERROR MESSAGES AND TROUBLESHOOTING

ERROR MESSAGES AND RESPONSES

- If any of the following error messages or conditions occurs, follow the procedures as described. These procedures are to be performed by the DataMaster DMT Supervisor only.
- DataMaster DMT Supervisors are responsible for the simulator key and the security screwdriver necessary to access the simulator or the internal components of the DMT.
- Law enforcement officers that are not DataMaster DMT Supervisors should refer to the *Infrared Breath Testing Device Student Manual DataMaster DMT Addendum*.
- If you are temporarily able to remedy a situation, but the situation reoccurs contact VDHL DataMaster Technical Services.
- All actions taken on a DataMaster DMT to remedy a condition or error message should be documented in the "Checkup and Maintenance Logbook" [ALC 803].
- If you are unable to remedy a condition or error, document the problem in the "Checkup and Maintenance Logbook" [ALC 803], remove the instrument from service and contact VDHL DataMaster Technical Services.
- When contacting VDHL DataMaster Technical Services, provide the following information:
 1. Your name, phone number, location and DataMaster DMT serial number.
 2. The error message and/or condition that has occurred.
 3. Test results during and after error message or condition.
 4. What you have attempted to remedy the situation, along with results of tests.

FATAL ERRORS

- Fatal Errors encountered by operators cannot be remedied at the Operator level, the officer should proceed to a different DataMaster:
- If the Supervisor follows all instructions but is unable to remedy the problem, remove the instrument from service and contact VDHL DataMaster Technical Services.

STANDARD OUT OF RANGE: Reported simulator vapor concentration is not within $\pm 5\%$ of the certified concentration. This error may occur during a subject breath test, or during the Accuracy and Precision Test performed during a testing protocol.

1. If the result is low due to solution depletion, perform a Simulator Solution Change.
2. If the result is out of range not due to depletion:
 - a. Try the test again.
 - b. Ensure the simulator jar is properly threaded to the simulator head.
 - c. Inspect the simulator O-ring and jar for damage.
 - d. Open the instrument cover and ensure the tubing properly connected and not kinked.
 - e. Repeat the test using a different lot of solution.

- Supervisors may perform an Accuracy and Precision Check to assess the simulator vapor concentration.

STANDARD DEVIATION OUT OF RANGE: During an Accuracy and Precision Check, the standard deviation result is greater than 0.002.

- Try the test again.
- Ensure the simulator jar is properly threaded to the simulator head.
- Inspect the simulator O-ring and jar for damage.
- Open the instrument cover and ensure the tubing is properly connected and not kinked.
- Supervisors may perform an Accuracy and Precision Check to assess the simulator vapor concentration.

SIMULATOR TEMPERATURE OUT OF RANGE: Reported simulator temperature is not within 33.5°C and 34.5°C.

- Check the simulator temperature by accessing the Technician Screen.
- If the simulator temperature reads 0.0°C:
 - Reseat the BNC connector on the simulator head.
 - Ensure the BNC connector is not touching the surrounding opening on the simulator tower.
 - Open the cover of the instrument and ensure the simulator temperature cable is properly connected to the processor control board (see Figure 5 page 24).
- If the simulator temperature reads greater than 34.5°C:
 - Ensure the simulator paddle is turning properly.
 - If it is not turning properly, carefully unscrew the simulator jar from the simulator head.
 - Lift the simulator head just until the simulator paddle is above the surface of the solution. Using your finger, gently turn the paddle.
 - If it begins to turn properly, reattach the simulator head to the simulator jar.
 - If it does not start turning properly, unplug the simulator, remove the instrument from service and contact VDHL DataMaster Technical Services.
 - Ensure the room temperature is within acceptable operating temperature. Adjust room temperature as needed.
- If the simulator temperature reads less than 33.5°C:
 - Ensure the simulator is plugged in.
 - Verify the power light is on and the heater light is on or blinking.
 - Ensure the room temperature is within acceptable operating temperature. Adjust room temperature as needed.

INTERNAL STANDARD ERROR: The instrument is not reading the quartz filter correctly.

1. Power the instrument off, wait one minute then turn it on.
2. Perform a diagnostic test.

SAMPLE CHAMBER TEMPERATURE OUT OF RANGE: Sample chamber is not between 45°C and 55°C.

1. Ensure that the room temperature is within acceptable operating temperature.
2. Check the sample chamber temperature by accessing the Technician Screen.
 - a. If the sample chamber temperature is too high, turn the instrument off and allow it to cool for 15 minutes then turn it on. Once the instrument displays "Ready, Push Run", perform a Diagnostic Test.
 - b. If the sample chamber temperature is too low, turn the instrument off, wait one minute then turn the it on. Once the instrument displays "Ready, Push Run", perform a Diagnostic Test.

BREATH TUBE TEMPERATURE OUT OF RANGE: The breath tube temperature is out of specification.

1. Check the breath tube temperature by accessing the Technician Screen.
2. Reseat the breath tube and the breath tube power connections.

CHOPPER OUT OF REGULATION: The chopper wheel is not activating correctly.

1. Turn the instrument off, wait one minute then turn it on.
2. Perform a Diagnostic Test.

FILTER WHEEL ERROR: The filter wheel is not activating properly.

1. Turn the instrument off, wait one minute then turn it on.
2. Perform a Diagnostic Test.

FILTER # (1,2,3) WON'T ZERO: One of the filters is not reading properly.

1. Ensure the breath tube is free from obstruction, including removing the mouthpiece.
2. Ensure the room temperature is within acceptable operating temperature.
3. Ensure the ambient air surrounding the instrument is free from alcohol or other contaminants. Ventilate the room if necessary.
4. Purge the sample chamber for 1-2 minutes.
5. If the error remains, turn the instrument off, wait one minute then turn it on. Once the screen displays "Ready, Push Run" perform a Diagnostic Test.

PUMP ERROR: The flow detector does not detect pump operation or the pump speed is incorrect.

1. Ensure the breath tube is free from obstruction, including removing the mouthpiece.
2. Open the cover of the instrument
 - a. Ensure all tubing is properly connected and free from kinks.
 - b. Ensure the plunger on the five-way valve is moving freely.
3. Turn the instrument off, wait one minute then turn it on. Once the instrument displays "Ready, Push Run" perform a Diagnostic Test.

DETECTOR OVERFLOW: The detector is out of range or a subject's BrAC is greater than 0.600

1. Ensure the breath tube is free from obstruction, including removing the mouthpiece.
2. Purge the Sample Chamber for at least 5 minutes.
3. If the error remains, turn the instrument off, wait one minute then turn it on. Once the instrument displays "Ready, Push Run" perform a Diagnostic Test.

NON-FATAL ERRORS

- Non-Fatal Errors encountered by operators may sometimes be remedied at the Operator level. If the operator is unable to remedy the problem the officer should proceed to a different DataMaster.
- If the Supervisor follows all instructions but is unable to remedy the problem, the instrument should be removed from service and VDHL DataMaster Technical Services contacted.

KEYBOARD DOES NOT FUNCTION:

1. Reseat the keyboard in the USB port at the back of the instrument.
2. Plug the keyboard into a different USB slot.
3. If available try a different USB keyboard.

AMBIENT FAIL: The instrument is detecting alcohol in the ambient air.

1. Remove the mouthpiece from the breath tube.
2. Remove possible contamination sources from the processing area.
3. Open windows or use a fan to draw fresh air into the room if possible.
4. Purge the sample chamber for at least 5 minutes.

BLANK ERROR: The instrument is unable to reach zero apparent alcohol.

1. Remove the mouthpiece from the breath tube.
2. Remove possible contamination sources from the processing area.

3. Open windows or use a fan to draw fresh air into the room if possible.
4. Purge the sample chamber for at least 5 minutes.

PURGE ERROR: The instrument is unable to purge out the apparent alcohol.

1. Remove the mouthpiece from the breath tube.
2. Remove possible contamination sources from the processing area.
3. Open windows or use a fan to draw fresh air into the room if possible.
4. Purge the sample chamber for at least 5 minutes.

COMMUNICATION ERROR: The embedded pc is not communicating with the controller board correctly.

1. Turn the instrument off, wait one minute then turn it on.

PLEASE BLOW flashes but instrument does not accept a sample.

1. Refer to graphic display to ensure subject is providing adequate air flow.
2. Remove the mouthpiece from the breath tube and replace with a new mouthpiece.
3. Attempt another breath sample.
4. Reseat the breath tube connection.
5. If the error remains, turn the instrument off, wait one minute then turn it on.

UNABLE TO ESTABLISH COMMUNICATION TO PRINTER: The instrument is unable to communicate with the printer.

1. Ensure the USB cable is connected to both the DataMaster DMT and the printer.
2. Ensure the printer is on and has ink and paper.
3. A different printer may be used, however the DMT requires a very specific print language which is not compatible with many printers.

INSTRUMENT WILL NOT PRINT: A report is not generated at the completion of a test.

1. Ensure the USB cable is connected to both the DataMaster DMT and the printer.
2. Ensure the printer is on and has ink and paper.
3. A different printer may be used, however the DMT requires a very specific print language which is not compatible with many printers.

RADIO FREQUENCY INTERFERENCE: A radio frequency transmission has been detected in the testing environment.

1. Ensure that there are no active transmitters in the processing area.

2. If transmissions from dispatch are causing radio frequency interferences, advise officers of possible "Interference Detected" errors when performing breath tests due to dispatch transmissions.
3. If RF Interference is a frequent problem, contact VDHL Technical Services.

SIMULATOR TIME OUT: The simulator took too long to reach plateau while running a Simulator Vapor test.

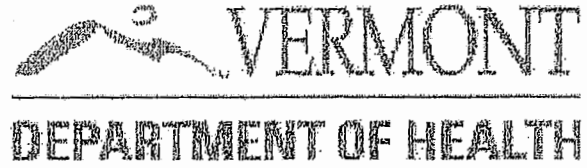
1. Attempt the test again.
2. Ensure the simulator head is properly threaded onto the simulator jar.
3. Inspect the simulator O-ring and jar for damage.
4. Ensure that the quick connects on the simulator head are properly connected to the ports on the simulator tower.
5. Open the cover and ensure the tubing is properly connected and free from kinks.

LOCKED OR FROZEN DISPLAY: The instrument is not responding to either the keyboard or the touch screen.

1. Turn the instrument off, wait one minute then turn it on.

SIMULATOR SOLUTION CHANGE REPORT

DataMaster DMT: 102606
Location: TRAINING
Date: 05/15/2008
Performed by: A. L. B



Accuracy and Precision Check

Concentration = 0.102 g/210L
Lot # = 08-08-100
Range = 0.0969 - 0.1071
Average = 0.104 g/210L
Std Dev = 0.001

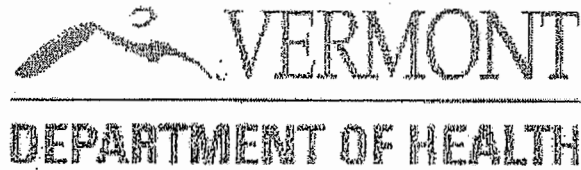
Simulator Temperature: 34.1°C

Performed by A. L. B

Date 05/15/2008

ROUTINE PERFORMANCE CHECK REPORT

DataMaster DMT: 121506
Location: VDEL
Calibration Date: 06/27/2008
Certification Date: 06/27/2008
Installation Date: 06/27/2008
RPC Date: 06/27/2008
Supervisor Name: A L B



Diagnostic Results

VERSIONS
DMI 0.32A
PIC 2.05
Modem 1.02
Questions 1.00
Reports 0.03

TEMPERATURES

Sample Chamber = 48.68°C
Breath Tube = 48.11°C
Digital Sim = 33.9°C

SETTINGS

Lamp Voltage = 1.66 V
Cooler Voltage = 1.61 V
Bias Voltage = 81.0 V
Chopper Freq = 546.9 Hz

PUMP INFO

Flow Rate = 4.484 L/M

DETECTOR INFO

PUMP ON OFF
MAX(V) 0.0994 0.1014
MIN(V) 0.0972 0.0992

FILTER INFO

Filter 1 0.099 Zero = true
Filter 2 0.580 Zero = true
Filter 3 1.206 Zero = true

INTERNAL STANDARD:

Xg = 0.1462 0.129%

Routine Performance Check Passed

Accuracy and Precision Check

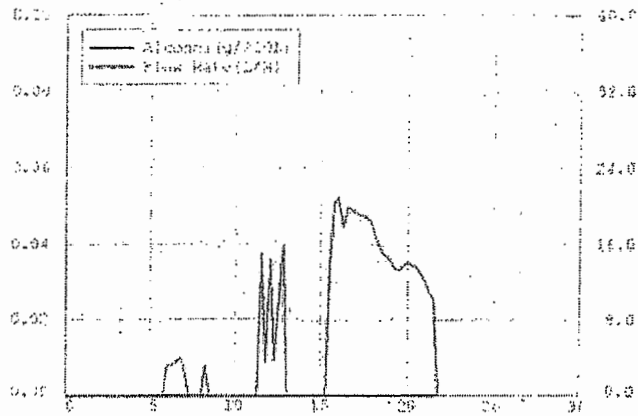
Concentration = 0.100 µg/210L
Lot # = 07-04-100
Average = 0.099 µg/210L
Std Dev = 0.000

RFI Interference Test

RFI detected

Sample Acceptance Test

Passed



Performed by *[Signature]*

Date 06/27/2008

Reviewed by _____

Date _____

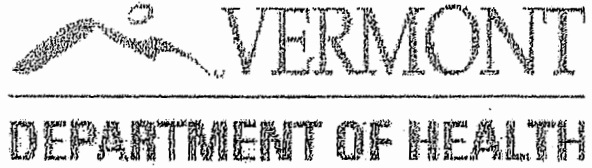
DMT Serial Number #121506

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06/27/2008 12:23

DIAGNOSTIC RESULT

DataMaster DMT: 102806
Location:
Calibration Date:
Certification Date: 05/08/2008
Installation Date: 05/12/2008
Test Date: 05/12/2008
Time: 10:13



VERSIONS
DMP 0.32
PIC 2.05
Modem 1.02
Questions 1.00
Reports 0.03

TEMPERATURES
Sample Chamber = -48.97°C
Breath Tube = 48.09°C
Digital Sim = 33.6°C

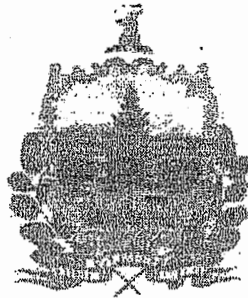
SETTINGS
Lamp Voltage = 1.96 V
Cooler Voltage = 1.97 V
Bias Voltage = 120.6 V
Chopper Freq = 530.1 Hz

PUMP INFO
Flow Rate = 3.761 L/M

DETECTOR INFO
BUMP ON OFF
MAX(V) 0.1185 0.1197
MIN(V) 0.1165 0.1179

FILTER INFO
Filter 1 0.118 Zero = true
Filter 2 0.589 Zero = true
Filter 3 1.470 Zero = true

INTERNAL STANDARD
Xq = 0.1209 0.07%



ACCURACY AND PRECISION TEST

STATE OF VERMONT

DataMaster DMT: 121706

Date: 08/11/2008
Time: 14:33:19

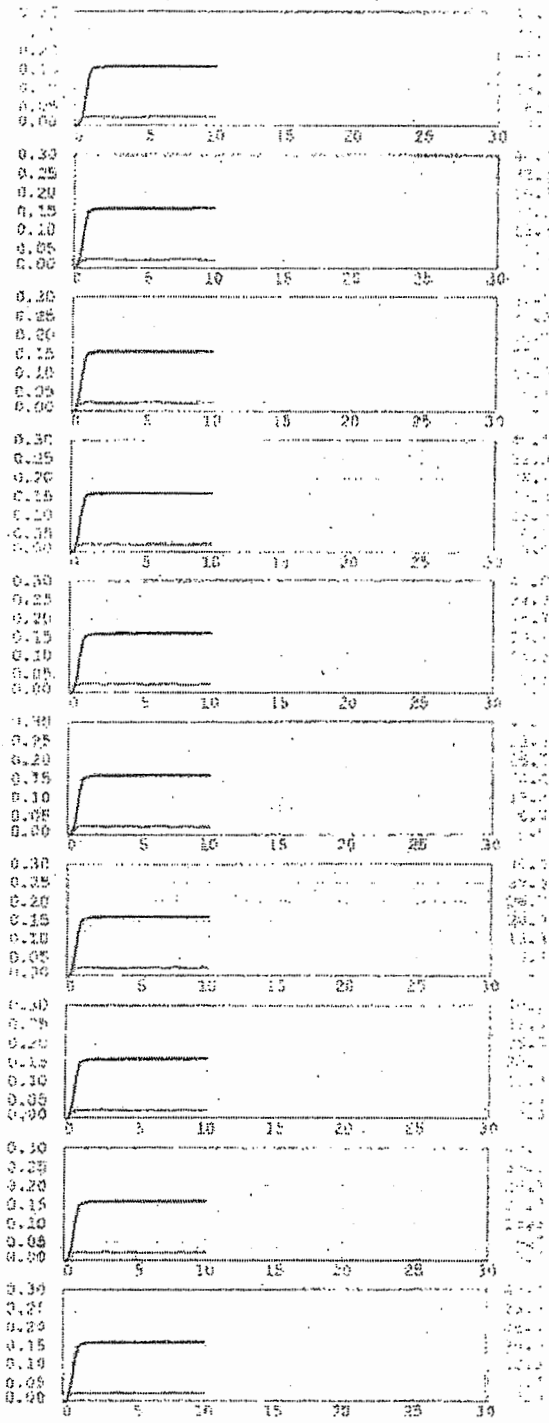
SUPERVISOR NAME: LARRY H. RICHARDSON

SOLUTION LOT #: 08-22-169
SOLUTION CONCENTRATION: 9.159

BLANK TEST	0.000	14:17
INTERNAL STANDARD	0.000	14:20
SIMULATOR VAPOR	0.159	14:22
SIMULATOR VAPOR	0.159	14:23
SIMULATOR VAPOR	0.159	14:24
SIMULATOR VAPOR	0.159	14:25
SIMULATOR VAPOR	0.159	14:26
SIMULATOR VAPOR	0.159	14:27
SIMULATOR VAPOR	0.159	14:28
SIMULATOR VAPOR	0.159	14:29
SIMULATOR VAPOR	0.159	14:30
SIMULATOR VAPOR	0.159	14:31
SIMULATOR VAPOR	0.159	14:32
BLANK TEST	0.000	14:42

Average = 0.1583
Std Dev = 0.0007

DMT Serial Number 121706



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08/11/2008 14:42