

Alaska Scientific Crime Detection Laboratory

Breath Alcohol Procedure Manual

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SECTION 1

INTRODUCTION

1.1 OVERVIEW OF THE ALASKA BREATH ALCOHOL PROGRAM

The Scientific Crime Detection Laboratory (crime lab) is part of the Department of Public Safety and per 13 AAC 63.010 the commissioner will designate an employee of the crime lab as the scientific director of the blood and breath alcohol testing program. Records of these designations are located on the laboratory network drive:

<\\ancsclsan01\lab share\Locked\Chemistry\Breath\Scientific Director\Designations from Commissioner>

The scientific director is responsible for all aspects of the breath alcohol program including calibration and certification of breath test instruments; training and certification of breath test operators and breath test supervisors; and maintaining the scientific integrity of the breath test program.

The breath alcohol discipline staff falls under the supervision of the scientific director and as his/her designee(s) carry out the tasks associated with running the statewide breath testing program.

1.2 EVIDENTIAL BREATH TEST INSTRUMENT

Per 13 AAC 63.020 and 13 AAC 63.030 the scientific director must approve a type of breath test instrument for use in the State of Alaska as well as maintain a list of all approved breath test instruments and associated equipment. The current breath test instrument approved for use in the State of Alaska is the "DataMaster DMT" originally manufactured by National Patent Analytical Systems and now manufactured by Intoximeters, Inc under the product name "Intox DMT". The approved associated equipment list is maintained in Appendix I of this manual.

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SECTION 2

ADMINISTRATIVE PROCEDURES

2.1 VERIFICATION OF CALIBRATION REPORTS

Per 13 AAC 63.100 the accuracy of the calibration of the breath test instruments must be verified at least every 60 days. The documentation of this accuracy check is the verification of calibration report. The accuracy check performed for the verification of calibration report consists of a diagnostic check and five tests of the external dry gas ethanol standard. The verification of calibration procedure is incorporated into the instrument software under the direction of the scientific director. A verification of calibration is initiated by the instrument software in intervals of less than 60 days and whenever the external dry gas ethanol standard is changed. Breath test operators and breath test supervisors can also initiate a verification of calibration.

The instrument software is scheduled to initiate a verification of calibration on the following dates at 12:00 pm:

January 3rd
February 21st
April 11th
May 30th
July 18th
September 5th
October 24th
December 12th

At the completion of a successful verification of calibration the instrument stores a copy of the report to memory. If a verification of calibration does not complete successfully the instrument will not allow a subject test to be initiated until a valid verification of calibration has been completed.

The instrument memory is periodically uploaded to a crime lab computer via a modem line to the DM Host software. The completed verification of calibration report is printed from the uploaded file and technically reviewed by a member of the breath alcohol discipline prior to being signed by the scientific director and notarized. The signed copies are scanned and a copy is placed on the local network drive and the crime lab website. The original signed copy is retained in a file at the crime lab by the scientific director.

The dates listed above are not the only acceptable dates for verifications of calibration. The only requirement is that a verification of calibration be performed every 60 days when an instrument is in service.

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Technical Review of Verification of Calibration Reports

A technical review of each verification of calibration report is performed by a qualified member of the breath alcohol discipline prior to the report being reviewed and signed by the scientific director. The technical review includes the following components:

- Verification that the external dry gas ethanol standard cylinder lot number and expiration date is included on the list of approved cylinders kept at the crime lab.
- Verification that the five external standard results fall within +/- 0.005 of the target value adjusted for barometric pressure.
- Verification that the standard deviation of the five external standard results is equal to or less than 0.0030.
- Ensure that each component of the diagnostic check reads “passed”.
- Ensure no status messages are present.
- Verify software version.

The technical reviewer’s initials and the date the review was performed are placed in the lower right-hand corner of the verification of calibration report indicating that the technical review was performed.

The scientific director completes a review that includes all components of a technical review and then signs the approved report in front of a notary. A verification of calibration is not a completed approved report until signed by the scientific director and notarized. The completed verification of calibration report certifies the instrument for continued evidentiary use in the State of Alaska.

2.2 DM HOST

The DM Host software is provided by National Patent Analytical Systems, Inc. The DM Host software communicates, through modem lines, with the breath test instruments to upload the data written to memory. The DM Host software also enables the breath analysts to remotely access the instruments in the field for troubleshooting purposes. Breath analysts can view the technician screen remotely for troubleshooting purposes; however, the voltages and settings can only be adjusted when an instrument is at the crime lab.

Uploading Data From Breath Test Instruments

The DataMaster DMT writes subject tests, diagnostic tests, verifications of calibration, supervisor tests, status messages, calibration records, tank change records and software update records to the instrument memory. The DM Host software enables the breath test discipline to manually upload the data collected by the breath test instruments in the field. The data is then stored in the DM Host database which is housed on a secure server at the crime lab.

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All data retrieved by DM Host from the breath test instruments is considered an official record and that data is not altered by the breath alcohol discipline staff. The data collected can be searched, reports generated and printed. Breath test instruments in the field will be uploaded periodically.

2.3 LABORATORY INFORMATION MANAGEMENT SYSTEM (LIMS)

The LIMS system is used by the breath alcohol program to electronically track instruments, external standards and instrument cases. Documents kept in the normal course of business of the program are scanned and kept on a secure network drive.

The LIMS program is used to track breath test operators, breath test supervisors and designated operators along with their training records. The program also tracks the status and location of each instrument along with any paperwork associated with that instrument.

The working instructions for the operation of the LIMS are maintained in the discipline as a separate controlled document.

2.4 LEGAL

One of the duties of the breath alcohol program is to work with the legal community to provide testimony and information about the breath alcohol program, the evidentiary breath testing instrument and alcohol impairment.

Subpoenas

The breath alcohol program receives subpoenas for breath only cases addressed to all analysts in the discipline. The forensic alcohol supervisor assigns an analyst for testimony based on workload and other cases active at the time of requested testimony.

Discovery

Discovery requests are handled by the scientific director or his/her designee. The breath alcohol program follows the laboratory discovery policy. All breath discovery provided is stored in the internal network drive:

<\\ancsclsan01\lab share\Locked\Chemistry\Discovery Provided>

Crime Lab Website

The crime lab website has a DataMaster DMT information page. Breath alcohol section documents kept in the normal course of business are posted to this page as well as a secure network drive. The DMT Discovery report is pulled from DM Host approximately monthly and

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is a list of all tests performed sorted by instrument serial number and date. The Breath Test Operator report is pulled from the LIMS approximately monthly and is a list of current breath test operator and breath test supervisors.

Testimony

The breath alcohol analysts provide testimony on the breath alcohol program, the evidentiary breath testing instrument and alcohol impairment. The Interpretation of Alcohol Results manual outlines information commonly provided in forensic alcohol testimony. This testimony is provided in state, municipal and federal courts upon request and approval by the discipline supervisor.

Department of Motor Vehicles

The Department of Motor Vehicles (DMV) holds administrative proceedings regarding impaired driving cases and can request information regarding these cases. Requests from the DMV are handled following the laboratory discovery policy. Occasionally, expert testimony is provided for these hearings upon request and approval by the discipline supervisor.

Documentation of Communications

The content of communications, both verbal and written, that involve case specific consultations, opinions, or interpretations will be documented in the LIMS. The detail of this documentation will be sufficient enough such that in the absence of the original analyst another competent analyst could evaluate its content. Any documents provided to the analyst during these communications will be added to the case file. Note: This requirement does not apply to the content of court testimony because that is documented through court transcripts.

A new case will be created in LIMS using the agency case number listed on the Datamaster subject test report. At a minimum, the subject's first and last name will also be entered into the case file. All subject test reports related to the case will be added to the LIMS imaging module.

2.5 SOFTWARE

Current and archived versions of software used with the DataMaster DMT are saved on the laboratory network drive:

<\\ancsclsan01\lab share\Locked\Chemistry\Breath\DMT Software>

Software versions are verified by a discipline analyst prior to use. The scientific director approves all software for use on the Datamaster DMT.

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SECTION 3

TECHNICAL PROCEDURES

3.1 INSTRUMENT CHECK-IN

When an instrument is initially received by the laboratory from the manufacturer a DataMaster Acceptance form is filled out by the receiving analyst. This information is then stored in the LIMS.

When instruments arrive at the laboratory from the field or are returned to the laboratory from a factory repair, the breath test instrument will follow a check-in procedure. The check-in procedure includes updating the instrument's status in the LIMS and uploading the instrument to retrieve all information stored in memory (if coming from the field). The check-in paperwork will be documented on the DataMaster Check-In Form which is scanned into the LIMS. This documentation is then technically and administratively reviewed by a qualified analyst.

The breath test supervisors communicate with the breath alcohol discipline about the status of their agency's instrument utilizing a change in instrument status form. This form includes information on when an instrument was placed in service, taken out of service and what problems, if any, were reported with the instrument.

All change in instrument status forms will be scanned into the image module of the appropriate instrument case file.

3.2 INSTRUMENT EVALUATION

A qualified breath analyst will perform a visual inspection including checking the internal connections and replacement of the regulator O-ring, if necessary, a review of the internal standard value on the Verification of Calibration, and evaluate the instrument for repair. If the internal standard value is $\geq 3.00\%$ then the instrument will be recalibrated. If a repair is required and can be performed at the laboratory, the analyst will complete the repair process. If the repair requires factory assistance, the instrument will be sent to the manufacturer for repair. Any repairs performed in-house will be documented on the DataMaster Evaluation Form which is then scanned into the LIMS, along with any supporting documents. This documentation is then technically and administratively reviewed by a qualified analyst.

Information about repairs completed by the manufacturer are scanned into the LIMS as part of the check-in paperwork.

When the repair process is completed, either by the factory or the crime lab, the instrument must undergo a certification prior to being placed in service at an agency. The analyst completing the repair will perform appropriate testing to verify the repair fixed the issue. Exchanging the

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external accessories such as printers, keyboards, and regulators do not require recertification because they do not alter the analytical components of the instrument.

3.3 INSTRUMENT CALIBRATION

Per 13 AAC 63.100 the scientific director has designated that the DataMaster DMT can be calibrated by either the manufacturer or a qualified breath analyst at the crime laboratory. The DataMaster DMT calibration is a single point calibration. Once instruments are calibrated they are not recalibrated unless it is determined by a breath analyst that recalibration is required.

Calibration Procedure

The crime lab performs calibration of the DataMaster DMT using a wet bath ethanol simulator solution and a blank simulator solution. The blank simulator solution is 500 mL of deionized water.

Wet bath ethanol simulator solutions used by the crime lab are commercially prepared, traceable to National Institutes of Standards and Technologies (NIST), and come accompanied by a certificate of analysis. These solutions have a concentration that yields an ethanol vapor concentration at 34°C of 0.100 g/210L on a breath test instrument.

The DataMaster DMT software allows the breath analyst to select the number of replicate samples of the simulator that the instrument requires for calibration. This option is found under the DMT Icon Setup menu for calibration. This will be set to run three replicates for both the blank and 0.100 g/210L simulator solutions.

When a qualified breath analyst determines that an instrument requires recalibration the analyst will create a calibration request in the LIMS and assign the request. A new bottle of simulator solution will be poured into a simulator and the date that the bottle was opened indicated on the label of the simulator. A new bottle of simulator solution will be used each day that instruments are calibrated. The analyst will ensure the instrument and simulators have been turned on and warmed up for at least one hour prior to performing calibration. The lot number and expiration date of the simulator solution and serial number and calibration date of the simulator used is documented on the Calibration Form which is scanned into the LIMS under the calibration request.

The DataMaster DMT instrument software prompts the breath analyst to attach both the blank and 0.100 g/210L ethanol simulator solutions to the breath instrument's calibration port at the appropriate times during the calibration sequence. The breath analyst will follow the instrument prompts. When the calibration process has been completed the breath analyst will print a copy of the calibration factors from the new calibration. The calibration will be scanned into the laboratory calibration request in the LIMS. Each laboratory calibration process is technically and administratively reviewed by another qualified analyst. When the technical review has been completed a certificate of calibration will be generated. These certificates are stored under the calibration request in the LIMS.

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When calibration is performed by the manufacturer the analyst will print the calibration factors upon return and it will be scanned into the LIMS in a factory calibration request. Every time the instrument is calibrated (whether by the factory or crime lab) the instrument must have the calibration verified with a certification procedure.

3.4 INSTRUMENT CERTIFICATION

As per 13 AAC 63.100 every breath test instrument must have the calibration verified prior to being certified for use. This must be performed by the scientific director or a qualified person designated by the scientific director. Instrument certification is the process that the breath alcohol discipline uses to verify that the individual breath instrument's calibration has been verified. The scientific director has designated that instrument certifications can be performed by qualified breath analysts from the crime lab.

An instrument is required to have a certification process performed after the instrument is received from the manufacturer, after a repair that has an effect on the analytical components of the instrument, and as part of preventative maintenance.

The DataMaster DMT certification process includes voltage checks, review of the internal standard value on the diagnostic check, linearity testing, functional tests, minimum volume determination and a non-drinking subject test.

Voltage Checks

The DataMaster DMT has digital potentiometers that can be viewed and adjusted by the breath analysts in the technician screen located under the DMT Icon. During certification the technician screen is checked by the analyst to ensure the voltages displayed are within normal operating tolerances published by the instrument manufacturer. The technician screen is also the location of the barometer setting, the radio frequency detection sensitivity and the breath/air volume and flow rate readout.

The barometer reading of the instrument will be adjusted to match the NIST traceable barometer.

The radio frequency sensitivity is adjusted from the technician screen. Prior to adjusting the sensitivity the analyst will ensure that all radios are turned off in the vicinity of the instrument. The initial adjustment will be performed by pressing the set button. This will trigger a series of beeps as the instrument sets a default baseline level from which it measures radio frequency.

The volume adjustment ensures the DataMaster DMT is appropriately reading breath volume. The breath analyst will use a graduated syringe to provide a 1.5 L breath sample to the DataMaster DMT while in the technician screen. The breath analyst will ensure that the volume

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reading in the technician screen reads within +/- 0.1L or the volume reading will be adjusted using the set screw inside the instrument.

Linearity Testing

The linearity test checks the DataMaster DMT's ability to accurately read ethanol at a range of levels. This is accomplished by using the linearity test function. A linearity test will be conducted using external dry gas ethanol standards at the following levels: 52 ppm, 103.5 ppm, 208 ppm, and 260.5 ppm, which are the equivalent to 0.020, 0.040, 0.080, and 0.100g/210L, respectively, measured at standard pressure by a breath test instrument. The linearity test will also include testing 0.200g/100mL and 0.300g/100mL wet bath solutions. Each external ethanol standard is analyzed five times. The allowable range for the external dry gas ethanol standard is +/- 0.005 or 5%, whichever is greater, of the target value adjusted for barometric pressure. The allowable range for the wet bath simulator solutions is +/- 0.005 or 5%, whichever is greater. The standard deviation of the five values must not be greater than 0.0030. The linearity test in the DataMaster gives an R-squared value and a Slope value. The R-squared requirement for this is at least 0.9990. The Slope requirement is 1.000000 +/- 0.030000.

Functional Tests

The DataMaster DMT generates status messages to inform the operator when certain situations occur. As part of the certification process some of these status messages are triggered to ensure the instrument is functioning properly. It is not possible to trigger every status message the DataMaster DMT can generate because some status messages require there to be a functional problem with the instrument. The following is a list of the status messages that are triggered during the certification process and their purpose.

- **Maximum Attempts Exceeded-** A maximum attempts exceeded status message is generated when the DataMaster DMT detects more than 10 incomplete attempts within the two minutes allotted for the subject sample. This status message is generated by setting up a subject test sequence and providing 10 incomplete attempts during the two minutes allotted. An attempt is defined as three quarter second readings above the minimum flow rate.
- **Invalid-** An invalid status message is generated when the DataMaster DMT detects a negative slope in the subject's breath alcohol profile. This can be an indication of "mouth alcohol" or a high concentration of ethanol in the subject's mouth. This status message can be triggered by swishing ethanol containing mouthwash in the analyst's mouth prior to providing a breath sample to the instrument.
- **Incomplete-** An incomplete status message is generated when the subject fails to provide a breath sample that meets the minimum requirements of the instrument within the two minutes allotted. To trigger this status message the instrument will be set up for a subject test and less than a minimum sample provided.

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- **Interference Detected-** An interference detected status message is generated when the DataMaster detects the presence of a substance other than ethanol in the sample provided. Two of the more common interfering substances that could be found in a subject breath sample are acetone and isopropanol. To generate this status message an 0.100 ethanol wet bath simulator solution containing 200 uL of acetone will be provided to the instrument through the breath hose. This is then repeated using an 0.100 ethanol wet bath simulator solution with 200 uL of isopropanol. A negative control is also performed utilizing a 0.100 ethanol wet bath simulator solution provided to the instrument through the breath hose. The 0.100 ethanol solution is not held to the 5% requirement for the purposes of this testing.

All interference tests will be printed with view details to display the filter readings. All filter 2 readings from the external standards will be averaged and rounded to four digits and must fall within +/- 0.0040. This will be repeated for all filter 3 readings. This is documented on the print outs.

- **Radio Frequency Interference Detected-** A radio frequency interference detected status message is generated when the DataMaster DMT detects the presence of radio frequency in the vicinity of the instrument. This status message is generated by setting up a subject test sequence and keying a radio in the room with the DataMaster. The instrument must generate an RFI status message when a radio is keyed in the room with the DataMaster DMT.

Minimum Volume Determination

Volume checks ensure that the instrument is requiring the appropriate minimum breath volume. The DataMaster DMT is set to accept breath samples at a minimum volume of approximately 1.5 L.

Volume checks are performed using a graduated syringe. The breath analyst will provide samples in increments of 0.1 L through the breath hose to determine the minimum volume that the instrument being certified will accept. The requirement for an instrument to be placed in service is that the minimum volume be greater than or equal to 1.3 L and less than or equal to 1.7 L.

Non-Drinking Subject Test and Verification of Calibration

The final step in an instrument certification process is a non-drinking subject test and a verification of calibration. The breath analyst will ensure a 208 ppm ethanol (0.080 g/210L at standard pressure) external dry gas ethanol standard cylinder is in place or follow the tank change procedure. The analyst will then initiate a verification of calibration and subject test using default software options. The subject test printout will be attached to the certification paperwork and the verification of calibration will be technically reviewed and signed by the

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scientific director. The verification of calibration report is not part of the certification paperwork.

If an instrument fails any portion of the certification process the instrument will be evaluated for repair or recalibration by a breath analyst. Any repair or recalibration will be documented on the appropriate forms and scanned into the LIMS. The instrument must complete a certification prior to being placed in service in the field.

Once an instrument has completed the certification process the breath analyst will assign the certification request in the LIMS. The certification paperwork will be scanned into the request and the request milestone rolled to draft complete. The instrument certification must be technically and administratively reviewed by another qualified analyst prior to the instrument being sent out for use. This technical review is documented in the LIMS. Once the certification has been reviewed a certificate is generated stating the instrument is certified for use.

3.5 PREVENTATIVE MAINTENANCE

In order to ensure that instruments in the field remain in good working order the crime lab has instituted a preventative maintenance schedule. This ensures that every instrument is returned to the crime lab for a visual inspection and recertification at least every four years. If an instrument is returned to the laboratory for repair the preventative maintenance will be performed at that time and the four year period will be restarted. Preventative maintenance consists of a check-in procedure; visual inspection and repairs as needed; and certification. When an instrument has been brought in for preventative maintenance, the check in form will be used to document that preventative maintenance was the reason for the return.

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SECTION 4

QUALITY ASSURANCE

4.1 EXTERNAL DRY GAS ETHANOL STANDARDS

Quality Assurance and Traceability

Dry gas ethanol standards are used as external standards with instruments in the field and for linearity testing as part of the certification process performed at the crime lab. External dry gas ethanol standards are purchased from an ISO 17025 certified manufacturer, are NIST traceable, and come with a certificate of analysis. When new cylinders arrive at the lab they will be marked with a received by initials and date. The 0.080 g/210L cylinders will be logged into LIMS and barcoded for tracking purposes.

An accuracy check will be performed on each new external dry gas ethanol standard lot received by analyzing three cylinders five times each on three certified DataMasters. In situations where only one or two cylinders from a specific lot are ordered and received, each cylinder will be tested. The differences between each value and the target value adjusted for barometric pressure must be less than or equal to ± 0.005 or 5% and the standard deviation must not exceed 0.0030 on any individual instrument. The DataMaster will report a four digit average for each tank tested. The three averages reported on the print outs from the three in house instruments will be averaged and rounded to three digits. The difference between this value and the target value adjusted for barometric pressure must be less than or equal to ± 0.004 or 4%. This process will be done for all three tanks being tested. The final average for each tank will be documented on the print outs.

Documentation of Accuracy Checks

The certificate of analysis, results of the accuracy check, and the quality assurance documentation for the in-house instruments used (see Section 4.5) are then scanned and placed on the laboratory network drive:

<\\ancsclsan01\lab share\Locked\Chemistry\Breath\Dry Gases>

If any lot of external dry gas standards does not pass the accuracy check, it will be rejected and the scientific director will contact the manufacturer.

Safety

When not in use, dry gas cylinders will be stored in a manner that prevents them from being knocked over easily. Examples include storage in the lower cabinets of the breath alcohol laboratory or in cylinder shipping boxes. Dry gas cylinders must be fully drained and rendered incapable of holding pressure before discarding.

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4.2 WET BATH ETHANOL SIMULATOR SOLUTIONS

Quality Assurance and Traceability

Commercially prepared wet bath ethanol simulator solutions are used for calibration and linearity testing of breath test instruments as well as interference detected functional checks. Ethanol simulator solutions are purchased from a NIST traceable supplier and come with a certificate of analysis. When a new bottle arrives at the lab it will be marked with a received by initials and date.

For the 0.200 and the 0.300 levels when a new lot of ethanol simulator solution is received an accuracy check will be performed on one bottle from each lot. The accuracy check will consist of analyzing one bottle five times each on three certified DataMasters. The differences between each value and the expected value, as defined by the manufacturer, must be less than or equal to 5% and the standard deviation must not exceed 0.0030 on any individual instrument. The difference between the average of all values, using the average calculated by the DataMaster and rounded to three digits, and the expected value must be less than or equal to 4%. This average will be documented on the instrument print out.

When a new shipment of 0.200 and 0.300 ethanol simulator solution arrives with the same lot number of current ethanol simulator solution one bottle must be run five times on one certified DataMaster. The differences between each value and the expected value, as defined by the manufacturer, must be less than or equal to 5%.

When a new shipment of 0.100 simulator solution arrives, one bottle from the lot will be tested 5 times on three certified DataMasters. The differences between each value and the expected value, as defined by the manufacturer, must be less than or equal to 5% and the standard deviation must not exceed 0.0030 on any individual instrument. The difference between the average of all values, using the average calculated by the DataMaster and rounded to three digits, and the expected value must be less than or equal to 3%. This average will be documented on the instrument print out.

If any lot of ethanol simulator solution does not pass the accuracy check, it will be researched to determine the reason. Lots will not be utilized in the breath alcohol program until the accuracy check passes.

Documentation of Accuracy Checks

The certificate of analysis, results of the accuracy check(s), and the quality assurance documentation for the in-house instruments used (see 4.5) are scanned and placed on the laboratory network drive:

<\\ancsclsan01\lab share\Locked\Chemistry\Breath\Simulator Solutions>

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4.3 SIMULATORS

The crime lab uses simulators manufactured by Guth Laboratories that are NIST traceable and come with a calibration certificate. Simulators are returned to Guth Laboratories annually for calibration and maintenance. Certificates of calibration for the simulators are scanned and placed on the laboratory network drive:

<\\ancsclsan01\lab share\Locked\Chemistry\Breath\Wet Bath Simulators>

4.4 BAROMETER

The barometer used for checking and adjusting the barometric pressure is purchased from an ISO 17025 certified manufacturer, NIST traceable and comes with a certificate of calibration. The barometer will be replaced when the manufacturer calibration expires. The current barometer will be used until its date of expiration and then a new barometer will take its place. Certificates of calibration are scanned and placed on the laboratory network drive:

<\\ancsclsan01\lab share\Locked\Chemistry\Breath\Barometers>

4.5 QUALITY ASSURANCE OF IN-HOUSE INSTRUMENTS

Instruments maintained for use in house will go through a series of tests prior to being used to test external standards. This testing is valid for 5 calendar days after performed. The following will be performed prior to testing new solutions or lots: diagnostic test, voltage check, adjust barometric pressure to match the NIST traceable barometer and an abbreviated linearity test. The linearity test will include testing a 0.020g/210L dry gas external standard, a 0.100g/210L dry gas external standard and a 0.300g/100mL wet bath simulator solution. The allowable range for the external dry gas ethanol standard is +/- 0.005 or 5%, whichever is greater, of the target value adjusted for barometric pressure. The allowable range for the wet bath simulator solutions is +/- 0.005 or 5%, whichever is greater. The standard deviation of the five values must not be greater than 0.0030. Quality assurance documentation for in-house instruments include the results of all testing and the printed technician screen.

4.6 SOLUTIONS USED FOR INTERFERENCE TESTING

The solutions used for interference testing are made at the crime lab using commercially prepared 0.100 wet bath ethanol simulator solutions and adding 200 uL of either acetone or isopropanol. The lot number and expiration date of the simulator solution and the serial number and calibration date of the simulator used will be documented in the certification paperwork. The wet bath ethanol simulator solutions used for interference detected testing will be replaced three months after preparation.

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4.7 IN FIELD INSTRUMENT REVIEW

When the software initiated verification of calibrations reports occur a breath alcohol analyst will perform a review of the instruments in the field. This is accomplished by pulling all testing from DMHost of the dates between the current verification of calibration and the prior verification of calibration via the In Field Instrument Review Report. This report is exported and entered into In Field Instrument Review worksheet. A breath alcohol analyst will review the worksheet and follow up on higher than expected occurrences of status messages. Once completed the worksheet and a summary of findings will be scanned and placed on the laboratory network drive:

<\\ancsclsan01\lab share\Locked\Chemistry\Breath\In Field Instrument Reviews>

The following instructions outline how to generate the In Field Instrument Review in DMHost and export the data into the In Field Instrument Review worksheet.

1. In DMHost, Report Writer, open the “In Field Instrument Review” report and click “Run”.
2. Type in the date(s) of interest when prompted and click “OK”.
3. When the report is generated in Crystal Report Viewer, click the export report button.
4. Choose a file name and change the “Save as type:” to “Microsoft Excel Workbook Data-Only (*.xlsx)”. Click “OK”.
5. When the export is completed, exit out of the DMHost windows and open the Excel file just created.
6. Delete Row 1 (with the numerous equal signs and no data).
7. Highlight column A and click the “Text to Columns” button under the Data tab.
8. Click the “Delimited” button and click “Next”.
9. Under “Delimiters” check the “Space” box and click “Finish” and then “OK” when the pop-up box appears.
10. Copy the data from Columns A, B, C, and D and paste it into the “In Field Instrument Review” worksheet. The area where the data is to be pasted is highlighted in yellow. There are two sheets in this worksheet. Paste the same data into both.
11. Print the summary table produced on both sheets and review.

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SECTION 5

TRAINING PROVIDED

5.1 BREATH TEST SUPERVISOR TRAINING

One of the duties of the breath alcohol discipline is to train and certify breath test supervisors. Per 13 AAC 63.070 a breath test supervisor must complete a course approved by the scientific director. The course content is written and taught by the breath alcohol discipline and approved by the scientific director.

To be certified by the scientific director as a breath test supervisor the applicant must obtain a score of 75 percent or higher on a written examination covering the content of the course. The examination is written by the breath alcohol discipline and approved by the scientific director. Upon successful completion of the breath test supervisor course a list is provided to the Alaska Police Standard Council and a certificate is issued indicating the breath test supervisor is authorized to teach breath test operator courses.

The breath test supervisor certification expires at 11:59 pm on December 31 of the third year after issued. Per 13 AAC 63.080 to recertify as a breath test supervisor the applicant must complete a recertification course approved by the scientific director. The course content is written and taught by the breath alcohol discipline and approved by the scientific director.

5.2 BREATH TEST OPERATOR TRAINING

Breath test operators are trained by breath test supervisors in accordance with 13 AAC 63.050 and 13 AAC 63.060. The breath alcohol discipline provides the approved training program and examination to breath test supervisors for this training.

To certify a breath test operator the breath test supervisor will complete a Request for Certification/Recertification of Breath Test Operators on the DataMaster DMT form to the crime lab indicating that the applicant has successfully completed the certification or recertification course. The breath alcohol discipline will then issue an electronic Breath Test Operator card with number emailed to the instructing supervisor indicating that the applicant is certified by the scientific director as a breath test operator.

Per 13 AAC 63.050 a breath test operator certificate expires at 11:59 pm on December 31 of the third year after issued.

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APPENDIX I

APPROVED ASSOCIATED EQUIPMENT

External Dry Gas Ethanol Standards

External dry gas ethanol standards are obtained from the breath alcohol discipline. External dry gas ethanol standards used by the breath alcohol discipline are purchased from an ISO 17025 accredited manufacturer, are NIST traceable, and come accompanied by a certificate of analysis. Each lot received by the crime lab is approved for use by the breath alcohol discipline after an accuracy test is performed on the lot. For this reason only external dry gas ethanol standards provided by the breath alcohol discipline may be used with the evidential breath testing instruments.

Mouthpieces

Mouthpieces are obtained from the breath alcohol discipline or the Department of Public Safety Supply. The current mouthpieces used are part number GM-1000-100 purchased from Guth.

DataMaster Parts and External Accessories

External accessories used with the DataMaster DMT include the breath hose and USB keyboard. Replacement parts are obtained from the breath alcohol discipline.

External Printers

The first external printer is provided by the breath alcohol discipline. It is an HP LaserJet Professional model number P1606dn. Replacement printers, paper and toner are the responsibility of the individual agency. Any compatible toner cartridges may be used with the printer. Any compatible external printer can be used with the DataMaster DMT.

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The following are the serial numbers of the DataMaster DMT instruments approved for use in the state of Alaska.

1	100342		31	100373		61	100406		91	100685
2	100343		32	100374		62	100410		92	100686
3	100344		33	100375		63	100411		93	100687
4	100345		34	100376		64	100412		94	100688
5	100346		35	100377		65	100413		95	100689
6	100347		36	100378		66	100414		96	100690
7	100348		37	100379		67	100415		97	100691
8	100349		38	100380		68	100416		98	100692
9	100350		39	100381		69	100417		99	100693
10	100351		40	100382		70	100418		100	100694
11	100352		41	100383		71	100665		101	100695
12	100353		42	100384		72	100666		102	100696
13	100354		43	100385		73	100667		103	100697
14	100355		44	100386		74	100668		104	100698
15	100356		45	100387		75	100669		105	100699
16	100357		46	100388		76	100670		106	100700
17	100358		47	100389		77	100671			
18	100359		48	100390		78	100672			
19	100360		49	100391		79	100673			
20	100361		50	100392		80	100674			
21	100362		51	100395		81	100675			
22	100363		52	100396		82	100676			
23	100364		53	100397		83	100677			
24	100365		54	100398		84	100678			
25	100366		55	100399		85	100679		Military	100225
26	100367		56	100400		86	100680		Military	100420
27	100368		57	100402		87	100681		Military	100421
28	100369		58	100403		88	100682		Military	100422
29	100370		59	100404		89	100683		Military	100423
30	100371		60	100405		90	100684		Military	100424

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APPENDIX II

LIST OF BREATH ALCOHOL PROGRAM FORMS

Internal Forms

DataMaster Acceptance Form

DataMaster Check-In Form

DataMaster Evaluation Form

DataMaster Calibration Form

DataMaster Certification Form

External Forms (posted on the crime lab website)

DataMaster Change in Instrument Status Form

Request for Certification/Recertification of Breath Test Operators on the DataMaster DMT Form

Change in Operator Status Form

All forms listed above are separate controlled documents as part of the Breath Alcohol Discipline.

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APPENDIX III

DATAMASTER DMT STATUS CODES KEY

Status Code	Status Message
0	Communication Error
1	Communication Error
2	Communication Error
3	Communication Error
4	Communication Error
5	User Abort
6	Pump Error
7	Filter 1 Won't Zero
8	Filter 2 Won't Zero
9	Filter 3 Won't Zero
10	Ambient Fail
11	Standard Out of Range
12	Simulator Time Out
13	Simulator Temp High
14	Simulator Temp Low
15	Simulator Temp Unknown
16	Blank Error
17	Internal Standard Error
18	Invalid Sample
19	Interference Detected (External Standard)
20	Detector Overflow
I	Incomplete
X	Interference Detected

Status Code	Status Message
21	Sample Chamber Temp High
22	Sample Chamber Temp Low
23	RFI
24	Barometer Error
25	Breath Tube Temp High
26	Breath Tube Temp Low
27	Incomplete Sample
28	Filter wheel Error
29	Sample Agreement Error
30	Suck Back Error
31	Calibration Error
32	Undefined Error
33	Diagnostic Failed
34	Fuel Cell Disagreement
35	Fuel Cell Error
36	Tank Pressure Too Low
37	Gas Flow Error
40	Static Analysis Error
100	Standard Deviation Error
101	Maximum Attempts Exceeded
102	Interference Detected (Subject Sample)
V	Invalid
R	Subject Refused

Please note this is a list provided by the manufacturer. Not all codes may be applicable to Alaska instruments.

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APPENDIX IV

REVISION HISTORY

2017 R0	2016 R1	Location	Revision made
2	NA	Overview of the Alaska Breath Alcohol Program	Added hyperlink to scientific director designation records
5	5	Legal	Changed location and added hyperlink to Discovery Provided folder
6	NA	Legal	Added Documentation of Communications sub-section.
6	6	Software	Changed location and added hyperlink to DMT Software
13	NA	External Dry Gas Ethanol Standards	Specified that only the 0.080 g/210L cylinders are logged into LIMS and barcoded.
13	NA	External Dry Gas Ethanol Standards	Added sentence "In situations where only one or two cylinders from a specific lot are ordered and received, each cylinder will be tested."
13	NA	External Dry Gas Ethanol Standards	Added Safety sub-section
13	13	External Dry Gas Ethanol Standards	Restructured sections and changed location in which documentation is stored. Added hyperlink.
14	13-14	Wet Bath Ethanol Simulator Solutions	Restructured sections and changed location in which documentation is stored. Added hyperlink.
15	14	Simulators	Changed location in which documentation is stored and added hyperlink.
15	14	Barometer	Changed location in which documentation is stored and added hyperlink.
NA	15	Quality Assurance of In-House Instruments	Removed locations in which documentation is scanned because it is now addressed in Sections 4.1 and 4.2.
16	15	In Field Instrument Reviews	Changed location in which documentation is stored and added hyperlink