VERMONT FORENSIC LABORATORY

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DATAMASTER TECHNICAL SUPPORT INQUIRY

Agency/Site: VFL **DataMaster Serial #:** 121706

Date: 4/27/2012 Requestor: _____

Instrument Supervisor: _____ Phone #: _____

Taken By: ALB/RCD

Problem: _____

Laboratory Response: Unit used for Rob Driscoll's instrument maintenance training under direction of Dave Radomski from NPAS. 7/23/2012

Work Performed: Removed 5-way valve from unit to repair a field instrument. Replaced 5-way valve with a new one 4/27/2012 ALB. Instrument needs cal/cert and full pre-deployment testing.

5/17/2012 - ALB attempted to cal/cert unit for training, but the filter wheel was making a grinding noise and not activating properly.

7/23/2012 - RD under direction of Dave Radomski from NPAS removed and disassembled detector block. Found the filter wheel was not properly tightened. After removing filter wheel, found that there was a burr in the teeth which was not allowing wheel to turn properly. Replaced the filter wheel and reassembled. Instrument completely reassembled.

7/26/2012 - RD updated property tag, installed updated software, installed adjustable flow valve and set volume to 1.5L, replaced lock and performed power up procedure. During calibration the unit had "Cal Check Error" and was recalibrated; during subsequent calibration, found stepper motor slipping on filter wheel so adjusted stepper motor tension and cycled filter for 35 cycles without fail. Unit calibrated and certified on 7/27/2012. Ready for pre-deployment testing.

☐ On Site ☒ In-house Attachments: 11 pages

Performed By: _____ 8/8/12 Date: 8/8/12

Final Review: _____ Date: 8/8/2012

CALIBRATION REPORT

DataMaster DMT: 121706
Calibration Date: 07/27/2012
Calibrated by: ROBERT DRISCOLL
Lot: 12-71-100

Ca = 0.100			
CAL = 0.966522	0.800	<= CAL <	1.200
b1 = 0.000	0.000	<= b1 <	0.004
b2 = 0.005	0.002	<= b2 <	0.010
b3 = 0.000	0.000	<= b3 <	0.004
Xq = 0.094	0.050	<= Xq <	0.200
a21 = 1.173599	1.050	<= a21 <	1.300
a31 = 0.493641	0.300	<= a31 <	0.800

Performed by _____ Date 07/27/2012

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 121706

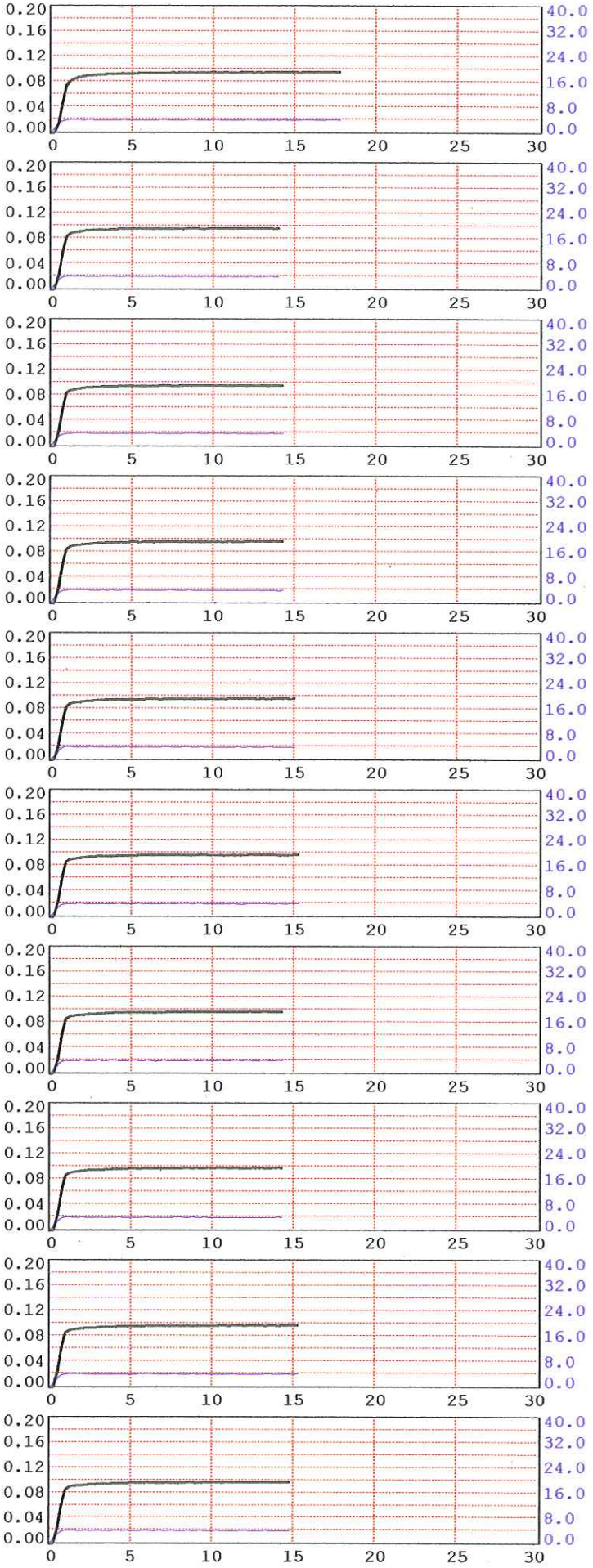
Date: 07/27/2012
Time: 13:10:13

SUPERVISOR NAME:
RD CAL CHECK

SOLUTION LOT #: 12-39-100
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	13:11
CALIBRATION CHECK	PASSED	13:11
SIMULATOR VAPOR 34.5°C	0.097	13:11
SIMULATOR VAPOR 34.4°C	0.097	13:12
SIMULATOR VAPOR 34.4°C	0.097	13:13
SIMULATOR VAPOR 34.4°C	0.098	13:14
SIMULATOR VAPOR 34.4°C	0.097	13:16
SIMULATOR VAPOR 34.4°C	0.098	13:17
SIMULATOR VAPOR 34.4°C	0.097	13:18
SIMULATOR VAPOR 34.4°C	0.099	13:19
SIMULATOR VAPOR 34.4°C	0.098	13:20
SIMULATOR VAPOR 34.4°C	0.098	13:21
BLANK TEST	0.000	13:22

Average = 0.097
Std Dev = 0.000



ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 121706

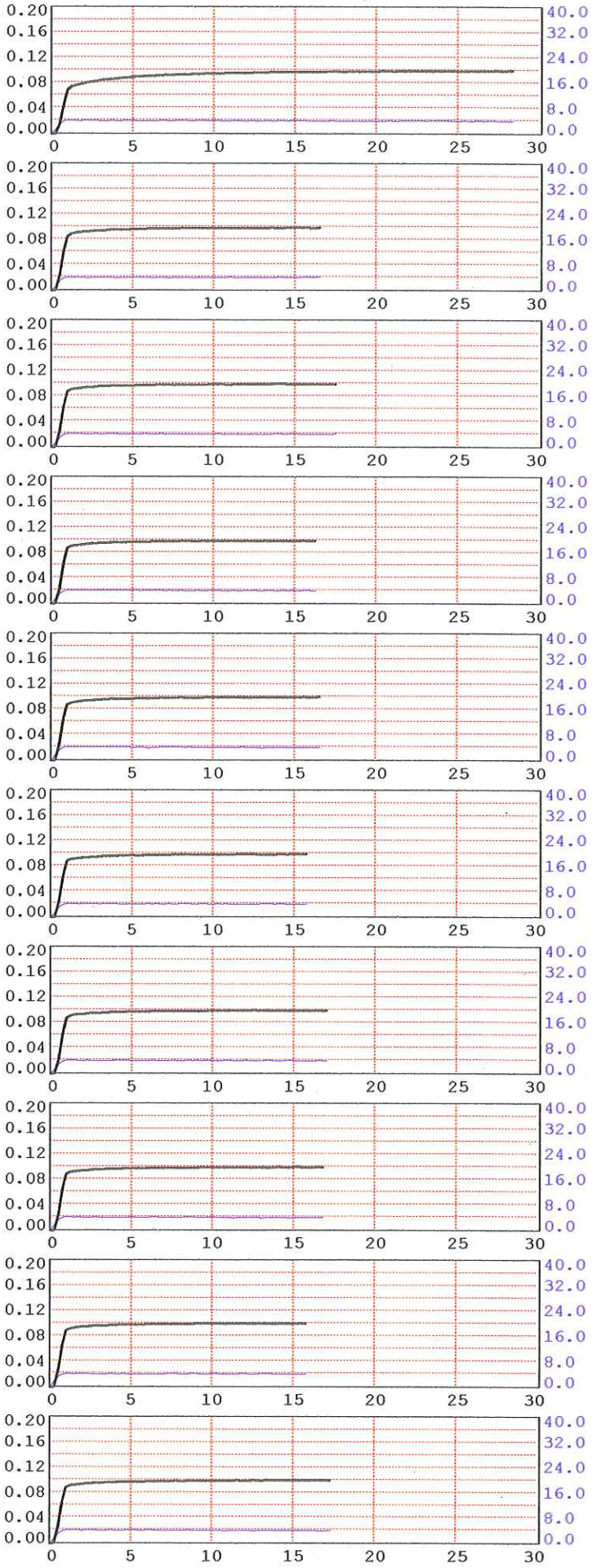
Date: 07/27/2012
Time: 14:24:10

SUPERVISOR NAME:
RD SECOND SOURCE CAL CHK

SOLUTION LOT #: GUTH 11250
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	14:25
CALIBRATION CHECK	PASSED	14:25
SIMULATOR VAPOR 34.0°C	0.100	14:25
SIMULATOR VAPOR 34.0°C	0.100	14:26
SIMULATOR VAPOR 34.1°C	0.100	14:28
SIMULATOR VAPOR 34.0°C	0.100	14:29
SIMULATOR VAPOR 34.0°C	0.100	14:30
SIMULATOR VAPOR 34.0°C	0.099	14:31
SIMULATOR VAPOR 34.1°C	0.100	14:32
SIMULATOR VAPOR 34.0°C	0.100	14:33
SIMULATOR VAPOR 33.9°C	0.100	14:34
SIMULATOR VAPOR 34.1°C	0.100	14:35
BLANK TEST	0.000	14:36

Average = 0.099
Std Dev = 0.000



CERTIFICATION REPORT

DataMaster DMT: 121706
Calibration Date: 07/27/2012
Certification Date: 07/27/2012
Certified by: ROBERT DRISCOLL

Diagnostic Results

```
VERSIONS
DMT: 1.01
PIC: 2.05
Modem: 2.4
Questions: 2.1

TEMPERATURES

Sample Chamber = 48.8°C
Breath Tube    = 45.3°C
Digital Sim    = 34.5°C

SETTINGS
Lamp Voltage   = 1.77 V
Cooler Voltage = 1.77 V
Bias Voltage   = 80 V
Chopper Freq   = 545 Hz

PUMP INFO
Flow Rate = 4.830 L/M

DETECTOR INFO
PUMP     ON         OFF
MAX(V)   -0.0488    -0.0447
MIN(V)   -0.0514    -0.0472

FILTER INFO
Filter 1  -0.045  Zero = true
Filter 2   0.611  Zero = true
Filter 3   0.264  Zero = true

CALIBRATION CHECK
Xq  = 0.094  0.47%
```

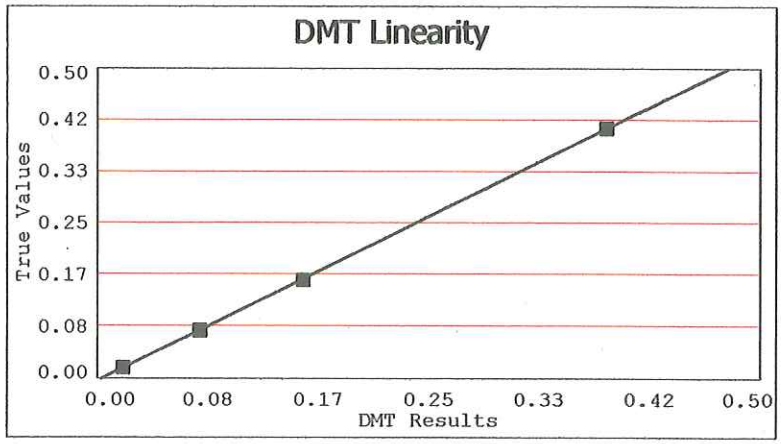
Options

```
OPTIONS
Units
   Alcohol.................. g/210L
Simulator
   Tolerance Check..... yes
   Standard Type....... wet
   Nominal............. 0.100
   Digital Simulator..... Guth34CNP
Subject
   Ask Questions....... yes
   Number of Tests..... 2
   Alcohol Display..... yes
   Volume Display...... yes
   Query Refusal....... yes
   Copies.............. 3
   Simulator Before.... yes
   Simulator Between... yes
   Simulator After..... no
   Observation Time.... 0
Supervisor
   Number of Tests..... 10
Calibration
   Standard Type....... wet
   Nominal............. 0.100
   Nominal(Dry Gas).... 0.100
   Number of Tests..... 1
Printer
   Printer On.......... yes
Software Configuration
   Data Collection..... yes
```

Linearity Check Results

True Value	Reported Average	Std Dev
0.019 g/210L Lot # 12-78-020	0.019 g/210L	0.0000
0.079 g/210L Lot # 12-74-080	0.077 g/210L	0.0000
0.160 g/210L Lot # 12-53-160	0.155 g/210L	0.0000
0.404 g/210L Lot # 12-62-400	0.384 g/210L	0.0010

$R^2 = 1$



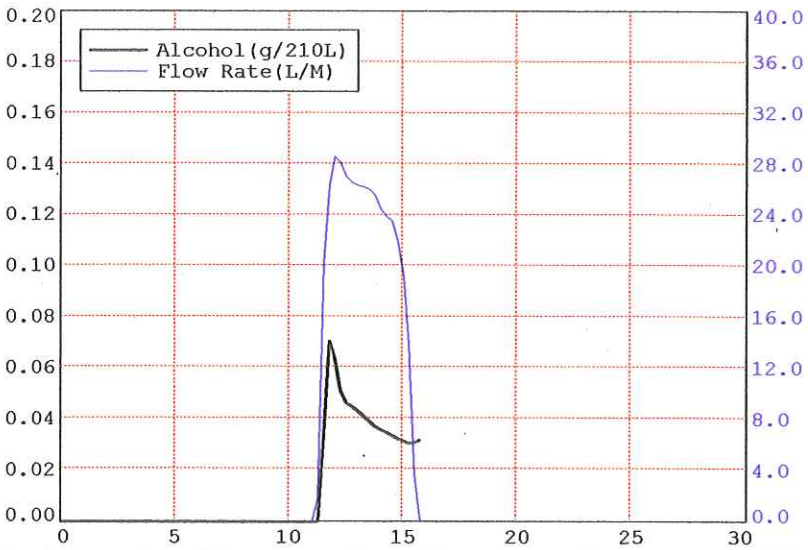
Acetone Interference Test

Lot # 12-79-08A1

Interference Detected

Mouth Alcohol Test

Mouth Alcohol Detected

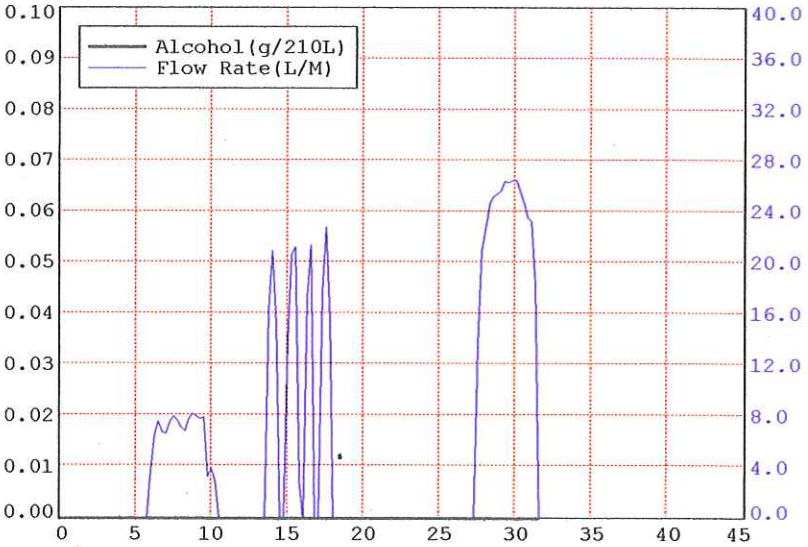


RF Detection Test

Passed

Sample Acceptance Test

Passed



CERTIFICATION PASSED

Performed by _____ Date 07/27/2012

Reviewed by _____ Date 8/2/12

CALIBRATION REPORT

DataMaster DMT: 121706
Calibration Date: 07/26/2012
Calibrated by: ROBERT DRISCOLL
Lot: 12-71-100

```
Ca  = 0.100
CAL = 0.976704   0.800  <= CAL < 1.200
b1  = 0.001      0.000  <=  b1 < 0.004
b2  = 0.005      0.002  <=  b2 < 0.010
b3  = 0.000      0.000  <=  b3 < 0.004
Xq  = 0.092      0.050  <=  Xq < 0.200
a21 = 1.177881   1.050  <= a21 < 1.300
a31 = 0.500247   0.300  <= a31 < 0.800
```

Unit reported
Cal check error
was recalibrated
8/2/12 [illegible]

Performed by [signature] Date 07/26/2012

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 121706

Date: 07/26/2012
Time: 14:31:02

SUPERVISOR NAME:
RCD CAL CHECK

SOLUTION LOT #: 12-39-100
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	14:31
CALIBRATION CHECK	ERROR	14:32

CALIBRATION CHECK ERROR

ACCURACY & PRECISION REPORT

STATE OF VERMONT

DataMater DMT: 121706

Date: 07/26/2012
Time: 14:33:29

SUPERVISOR NAME:
RCD CAL CHECK

SOLUTION LOT #: 12-39-100
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	14:34
CALIBRATION CHECK	ERROR	14:34

CALIBRATION CHECK ERROR

CALIBRATION REPORT

DataMaster DMT: 121706
Calibration Date: 07/26/2012
Calibrated by: ROBERT DRISCOLL
Lot: 12-71-100

Ca = 0.100			
CAL = 0.985956	0.800	<= CAL <	1.200
b1 = 0.001	0.000	<= b1 <	0.004
b2 = 0.004	0.002	<= b2 <	0.010
b3 = 0.000	0.000	<= b3 <	0.004
Xq = 0.092	0.050	<= Xq <	0.200
a21 = 1.203760	1.050	<= a21 <	1.300
a31 = 0.487428	0.300	<= a31 <	0.800

Unit reported interference during cal check
Adjusted filter wheel and tested/recalibrated
8/2/12
RCD

Performed by _____ Date 07/26/2012

ACCURACY & PRECISION REPORT

STATE OF VERMONT

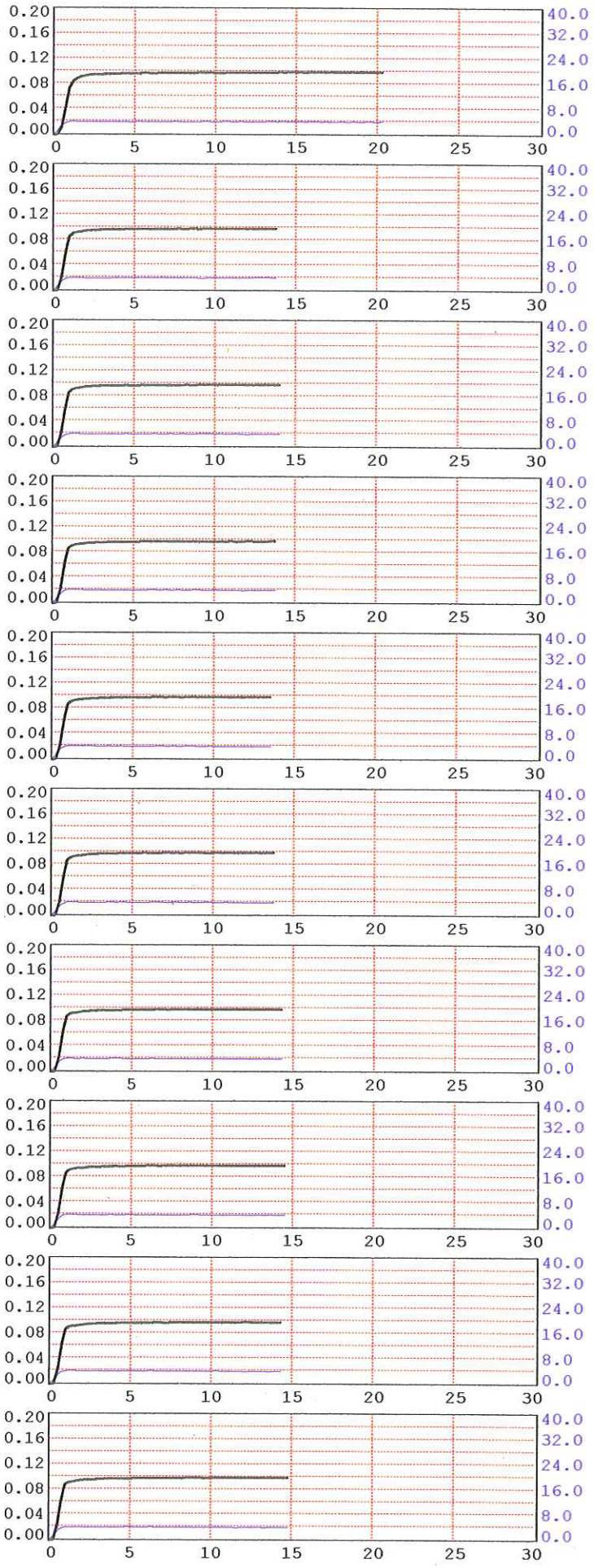
DataMater DMT: 121706

Date: 07/26/2012
Time: 14:59:38

SUPERVISOR NAME:
RCD CAL CHECK

SOLUTION LOT #: 12-39-100
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	15:00
CALIBRATION CHECK	PASSED	15:00
SIMULATOR VAPOR 34.4°C	INTERFERENCE	15:01
SIMULATOR VAPOR 34.4°C	INTERFERENCE	15:02
SIMULATOR VAPOR 34.4°C	0.098	15:03
SIMULATOR VAPOR 34.4°C	INTERFERENCE	15:04
SIMULATOR VAPOR 34.2°C	INTERFERENCE	15:05
SIMULATOR VAPOR 34.4°C	0.099	15:06
SIMULATOR VAPOR 34.4°C	0.099	15:07
SIMULATOR VAPOR 34.4°C	0.099	15:08
SIMULATOR VAPOR 34.4°C	0.098	15:09
SIMULATOR VAPOR 34.4°C	0.099	15:10
BLANK TEST	0.000	15:11



ACCURACY & PRECISION REPORT

STATE OF VERMONT

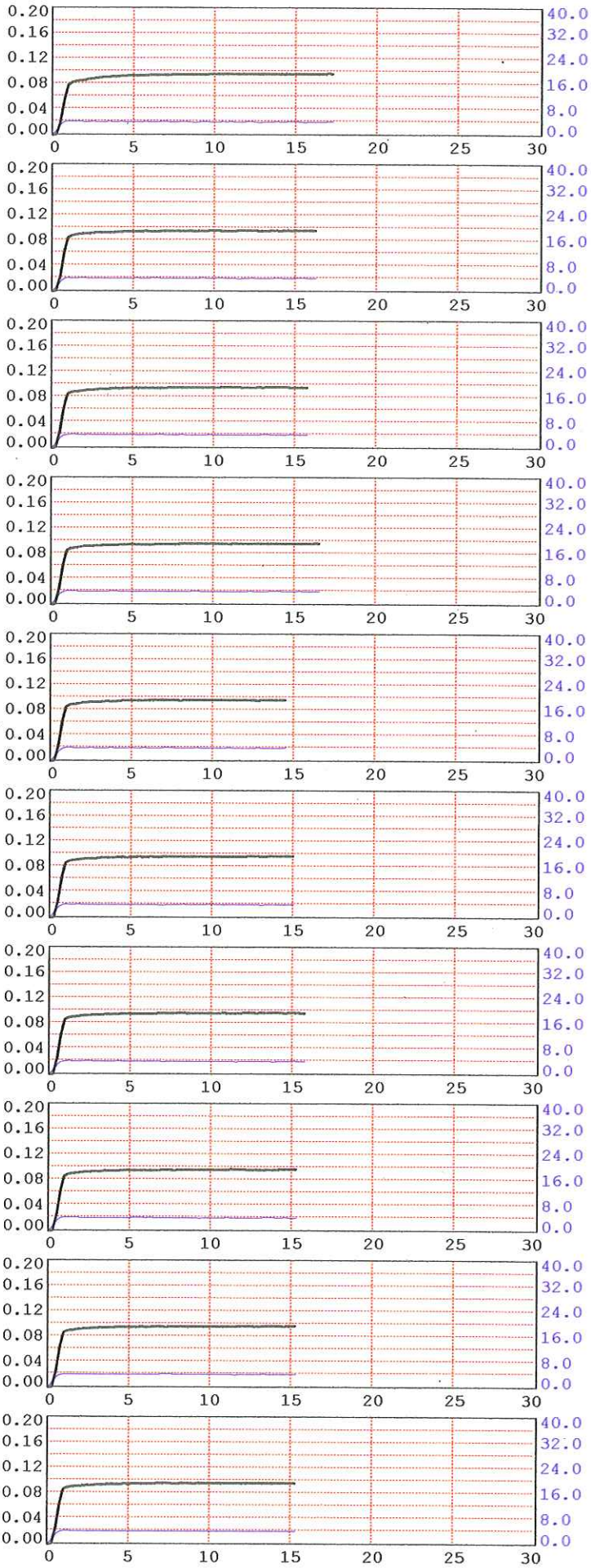
DataMater DMT: 121706

Date: 07/27/2012
Time: 13:24:32

SUPERVISOR NAME:
RD SECOND SOURCE CAL CHK

SOLUTION LOT #: GUTH 11250
SOLUTION CONCENTRATION: 0.100

BLANK TEST	0.000	13:25
CALIBRATION CHECK	PASSED	13:25
SIMULATOR VAPOR 33.8°C	0.096	13:25
SIMULATOR VAPOR 33.8°C	0.096	13:27
SIMULATOR VAPOR 33.8°C	0.096	13:28
SIMULATOR VAPOR 33.8°C	0.096	13:29
SIMULATOR VAPOR 33.8°C	0.097	13:30
SIMULATOR VAPOR 33.8°C	0.096	13:31
SIMULATOR VAPOR 33.7°C	0.097	13:32
SIMULATOR VAPOR 33.8°C	0.096	13:33
SIMULATOR VAPOR 33.8°C	0.096	13:34
SIMULATOR VAPOR 33.7°C	0.096	13:35
BLANK TEST	0.000	13:36

Average = 0.096
Std Dev = 0.000

replaced
Guth 11250 solution
RCD 7/27/12