

# Alaska Scientific Crime Detection Laboratory

## DataMaster Evaluation Form

Issued: 6/11/2014  
Effective: 6/11/2014

Version: DMEF2014 R0  
Status: Active

Instrument # 100345

Date: 5/6/15

Analyst: Colleen O'Bryant

1. Reason for instrument evaluation

Detector overflow on 4/11/15 VOC while in the field.

2. Troubleshooting/Repair

Instrument had detector overflow (status manager) on 5 VOC attempts between 4/11/15 and 4/20/15. Upon return to the lab the detector voltage was 0.417 and completed a VOC without issue. I reached out to Dave Radanski (NPAAS) asking about sudden detector voltage spikes. He suggested monitoring the lamp, cooler and bias voltages after a restart of the DM + repeating the cycle multiple times. Fluctuations in the lamp voltage while in the field as well as compared to readings at SCAD indicate the controller board needs to be replaced. See summary of voltages attached. Controller board replaced, software updated to 3.01 + performed a VOC without issue.

3. VOC (attached)

4. Verify software version  3.01

Return to Factory for Repair

Ready For Calibration

Ready For Certification

**O`Bryant, Colleen S (DPS)**

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**From:** Dave Radomski <dmr@npas.com>  
**Sent:** Tuesday, June 09, 2015 4:53 PM  
**To:** O`Bryant, Colleen S (DPS)  
**Subject:** RE: Detector Overflow

Precisely!

----- Original message -----

**From:** "O`Bryant, Colleen S (DPS)" <[colleen.obryant@alaska.gov](mailto:colleen.obryant@alaska.gov)>  
**Date:** 06/09/2015 7:39 PM (GMT-05:00)  
**To:** Dave Radomski <[dmr@npas.com](mailto:dmr@npas.com)>  
**Subject:** RE: Detector Overflow

**I`m thinking based upon these numbers I have one of each. 100345 has a fluctuating lamp voltage meaning I should replace the controller board. 100348 has stable lamp, cooler and bias values indicating I should replace the detector.**

**What do you think?**

**Colleen O`Bryant – Forensic Scientist III**

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**From:** Dave Radomski [<mailto:dmr@npas.com>]  
**Sent:** Tuesday, June 09, 2015 10:16 AM  
**To:** O`Bryant, Colleen S (DPS)  
**Subject:** Re: Detector Overflow

Record Cooler, Lamp, Bias and Detector Voltages.

Turn off and back on.

Record Cooler, Lamp, Bias and Detector Voltages.

Repeat this a few times and see if any of the settings (Cooler, Lamp, Bias) are changing.

If you have the historical values for these settings,that would also help for comparison.

If the detector voltage is changing but the Cooler, Lamp and Bias are not, the issue is either a loss of energy through the sample chamber or a failing detector.

If the Cooler, Lamp and/or Bias are changing, the digital pot(s) on the controller board are defective in that they're not recalling the proper set point at power up.

On Jun 9, 2015, at 1:19 PM, O'Bryant, Colleen S (DPS) wrote:

Dave,

I have two instruments that recently returned from the field for detector overflow.

100348 was in service in Sand Point for almost two years, it is a low use instrument, but VOCs are still done every ~60 days. Chuck attempted to do the 4/11/15 VOC remotely, so he logged into the instrument and got a detector overflow with the detector around 2.00 volts. It was returned to the lab and the volts are similar here (1.9V). The lamp (2.06) and cooler (1.82) both seem a little high, but not outrageous.

The other instrument is a similar story. 100345 in service in King Cove for almost 3 years, low use instrument. Detector voltage is spiked for the 4/11/15 VOC and 5 attempts after that. Voltage is ~2.00V. As found voltage is .415V, with lamp (1.84) and cooler (1.58) closer to ranges I'm used to seeing. Ran a VOC at the lab without issue.

**Any ideas? What would cause a detector voltage to randomly spike?**

Trying to figure out how to troubleshoot these two.

Thanks,  
Colleen

100345	Summary of Lamp, Cooler, Bias and Detector voltages.				
Date	Lamp	Cooler	Bias	Detector	
2/26/2015	1.84V	1.58V	81V		VOC Completed Successfully - In the field
4/11/2015	1.50V	1.53V	81V		Failed VOC - Detector Overflow - In the field
4/13/2015	1.50V	1.53V	81V		Failed VOC - Detector Overflow - In the field
4/16/2015	1.50V	1.53V	81V		Failed VOC - Detector Overflow - In the field
4/17/2015	1.50V	1.53V	81V		Failed VOC - Detector Overflow - In the field
4/20/2015	1.50V	1.53V	81V		Failed VOC - Detector Overflow - In the field
5/6/2015	1.84V	1.58V	81V	.417V	As-found voltages when instrument arrived at SCDL
6/9/2015	1.84V	1.48V	81V	.703V	Voltages from Technician Screen following reset @ SCDL
6/9/2015	1.84V	1.58V	81V	.447V	Voltages from Technician Screen following reset @ SCDL
6/9/2015	1.84V	1.58V	81V	.486V	Voltages from Technician Screen following reset @ SCDL
6/9/2015	1.84V	1.58V	81V	.469V	Voltages from Technician Screen following reset @ SCDL
6/9/2015	1.84V	1.58V	81V	.466V	Voltages from Technician Screen following reset @ SCDL

COB 6/11/15

# VERIFICATION OF CALIBRATION REPORT

*of DataMaster dmt Breath Test Instrument*

*State of Alaska*

Serial #: 100345

*Scientific Crime Detection Laboratory - Statewide Breath Alcohol Program*

Date: 06/11/2015

## External Standard Test Values

## EXTERNAL STANDARD INFORMATION

NOMINAL: 0.080  
 TARGET AT 29.79: 0.080  
 LOT #: 07214080A2  
 EXPIRATION: 04/01/2016  
 TANK PRESSURE: 1068 psi

BLANK TEST	0.000	15:16
INTERNAL STANDARD	VERIFIED	15:16
EXTERNAL STANDARD	0.078	15:16
BLANK TEST	0.000	15:17
EXTERNAL STANDARD	0.078	15:17
BLANK TEST	0.000	15:18
EXTERNAL STANDARD	0.078	15:18
BLANK TEST	0.000	15:19
EXTERNAL STANDARD	0.079	15:19
BLANK TEST	0.000	15:20
EXTERNAL STANDARD	0.079	15:20
BLANK TEST	0.000	15:21

Average = 0.0784  
 Std Dev = 0.0005

## Diagnostic Check

## VERSIONS

DMT: 3.01  
 PIC: 3.02  
 Modem: 2.6  
 Questions: 2.2

## TEMPERATURES

Sample Chamber = 49.2°C	PASSED
Breath Tube = 46.4°C	PASSED

## PUMP INFO

Flow Rate = 4.910 L/M	PASSED
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## DETECTOR INFO

PUMP ON	PASSED
PUMP OFF	PASSED

## FILTER INFO

Filter 1	PASSED
Filter 2	PASSED
Filter 3	PASSED

INTERNAL STANDARD	PASSED
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I, Nita J. Bolz, after being first duly sworn, depose and state as follows:

- (1) I am a Forensic Scientist IV at the State of Alaska Scientific Crime Detection Laboratory.
- (2) The Alaska Scientific Crime Detection Laboratory is an entity within the Department of Public Safety.
- (3) I am the Scientific Director of the State Breath Alcohol Program.
- (4) In that capacity, I am responsible for overseeing the Breath Alcohol Program, which includes assuring that instruments are calibrated and maintaining program records.
- (5) The above is a true and accurate verification of calibration, which is performed by the instrument's software, as specified by the State Breath Alcohol Program. Verification of calibration is a regularly conducted and regularly recorded activity of the State Breath Alcohol Program.
- (6) The referenced instrument is certified for evidentiary use in the State of Alaska.

\_\_\_\_\_  
 Nita J. Bolz  
 Scientific Director  
 State Breath Alcohol Program

Subscribed and sworn before me this \_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_