



## Test Monitoring Center

@ Carnegie Mellon University  
6555 Penn Avenue, Pittsburgh, PA 15206, USA

<http://astmtmc.cmu.edu>  
412-365-1000

MEMORANDUM: 14-009  
DATE: May 20, 2014  
TO: Gil Reinhard, Chairman, CBT Surveillance Panel  
FROM: Michael T. Kasimirsky *Michael T. Kasimirsky*  
SUBJECT: CBT Testing from October 1, 2013 through March 31, 2014

A total of 17 CBT tests were reported to the Test Monitoring Center during the report period from October 1, 2013 through March 31, 2014.

Please find attached a summary of testing activity this period.

MTK/mtk/astm0414.doc/mem14-009.mtk.doc

cc: F. M. Farber

J. A. Clark

CBT Surveillance Panel

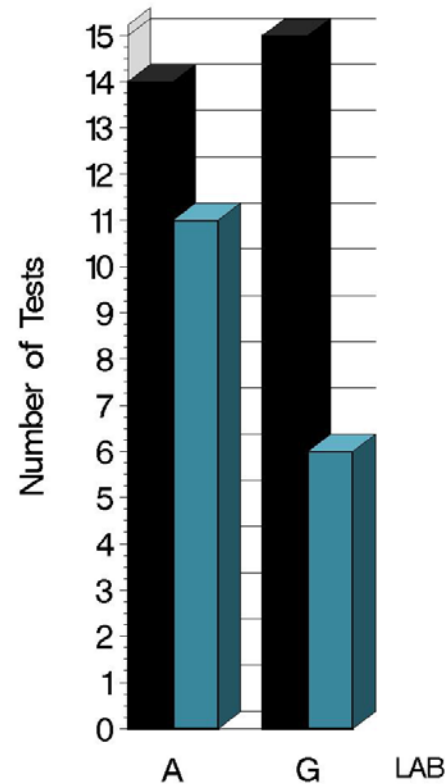
<ftp://ftp.astmtmc.cmu.edu/docs/bench/cbt/semiannualreports/cbt-04-2014.pdf>

Distribution: email

# CBT (D 5968)

|                | Reporting Data |
|----------------|----------------|
| Number of Labs | 2              |

NUMBER OF TESTS REPORTED  
BY LAB AND REPORT PERIOD



Report Period: ■ Current ■ Previous

10:04:51 20MAY2014

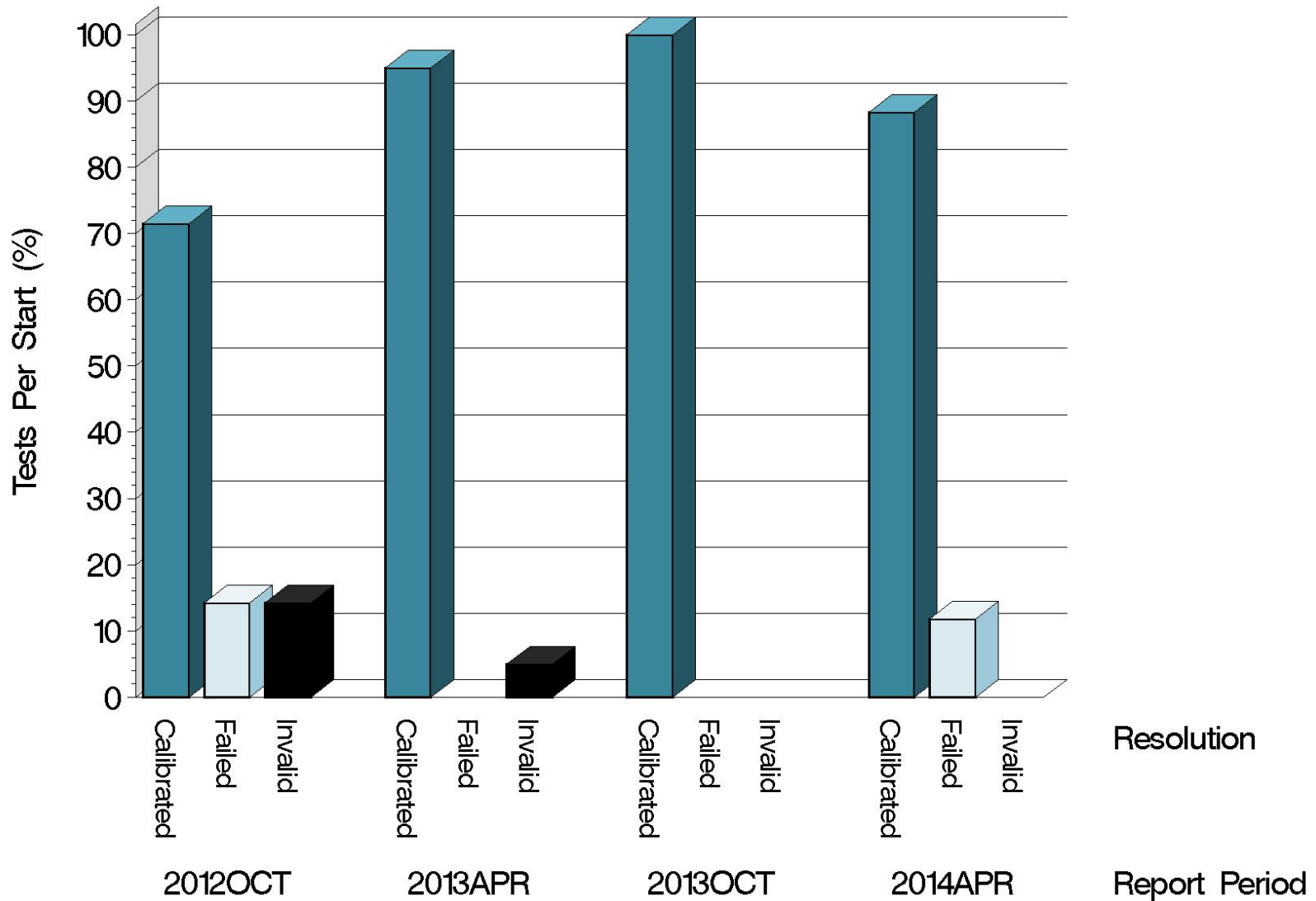
# CBT (D 5968)

## Test Distribution by Validity

|                           |    | Number of Tests |
|---------------------------|----|-----------------|
| Accepted for calibration  | AC | 15              |
| Rejected                  | OC | 2               |
| Invalidated               | LC | 0               |
| Aborted                   | XC | 0               |
| Hardware Approval run     | NI | 0               |
| New Solvent run           | NI | 0               |
| Unacceptable Approval run | MI | 0               |
| Total                     |    | 17              |

# CBT (D 5968)

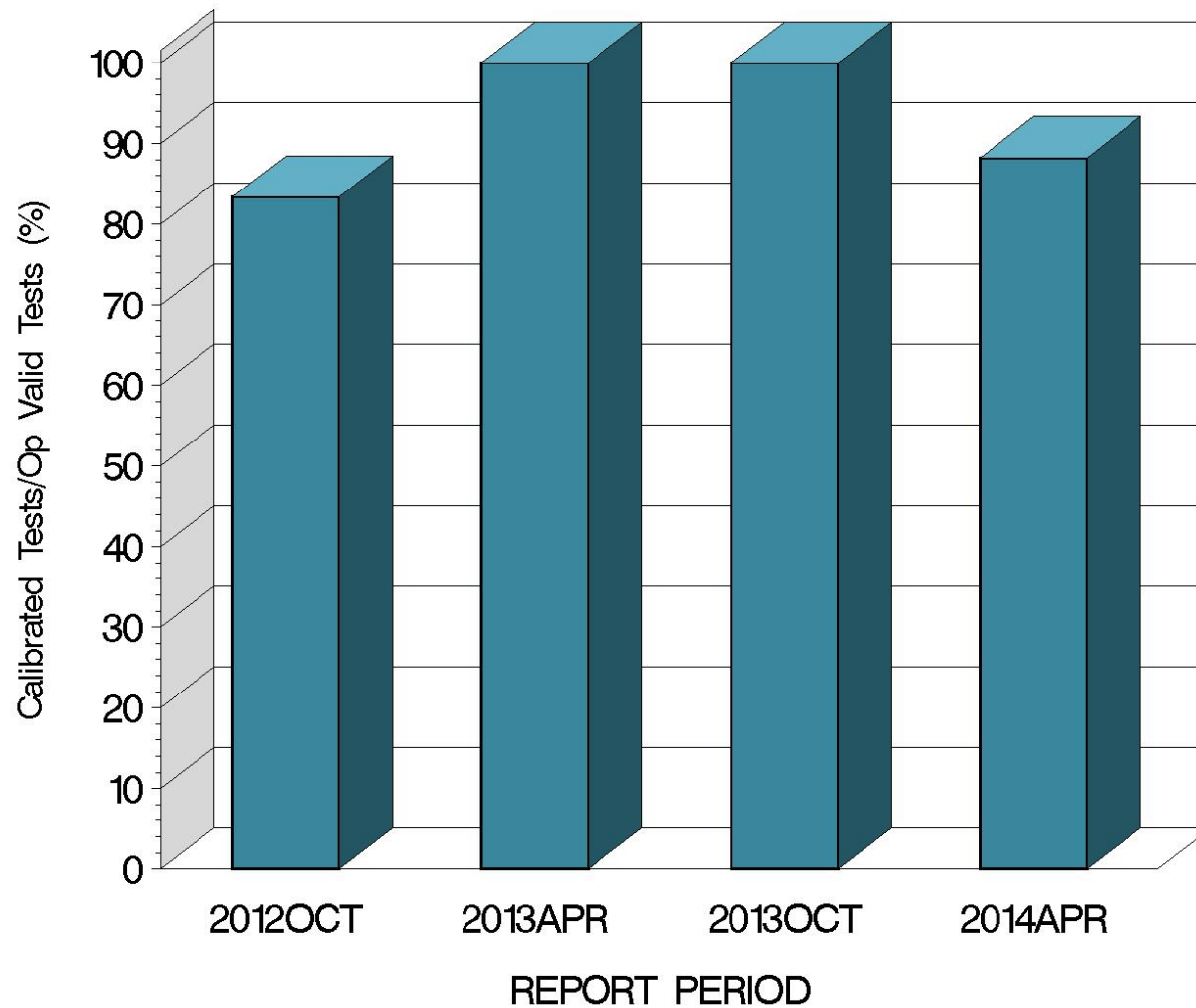
## CALIBRATION ATTEMPT SUMMARY



10:04:51 20MAY2014

# CBT (D 5968)

OPERATIONALLY VALID TESTS  
MEETING ACCEPTANCE CRITERIA



10:04:51 20MAY2014

# CBT (D 5968)

## CAUSES FOR LOST TESTS

| Summary of Reasons for Failed Tests | No. of Tests |
|-------------------------------------|--------------|
| Severe Lead Concentration           | 1            |
| Mild Copper & Lead Concentration    | 1            |

| Summary of Reasons for Invalid Tests | No. of Tests |
|--------------------------------------|--------------|
| No tests were invalid this period    | 0            |

| Summary of Reasons for Aborted Tests | No. of Tests |
|--------------------------------------|--------------|
| No tests were aborted this period    | 0            |

## CBT (D 5968)

| Average $\Delta/s$ By Laboratory |    |        |          |
|----------------------------------|----|--------|----------|
| Lab                              | n  | CUC    | PBC      |
| A                                | 11 | -1.484 | -1.97515 |
| G                                | 6  | -1.060 | -1.35444 |
| Industry                         | 17 | -1.334 | -1.75608 |

Individual test results can be found on the TMC Web Page at the following link:

<ftp://ftp.astmtmc.cmu.edu/refdata/bench/cbt/data/>

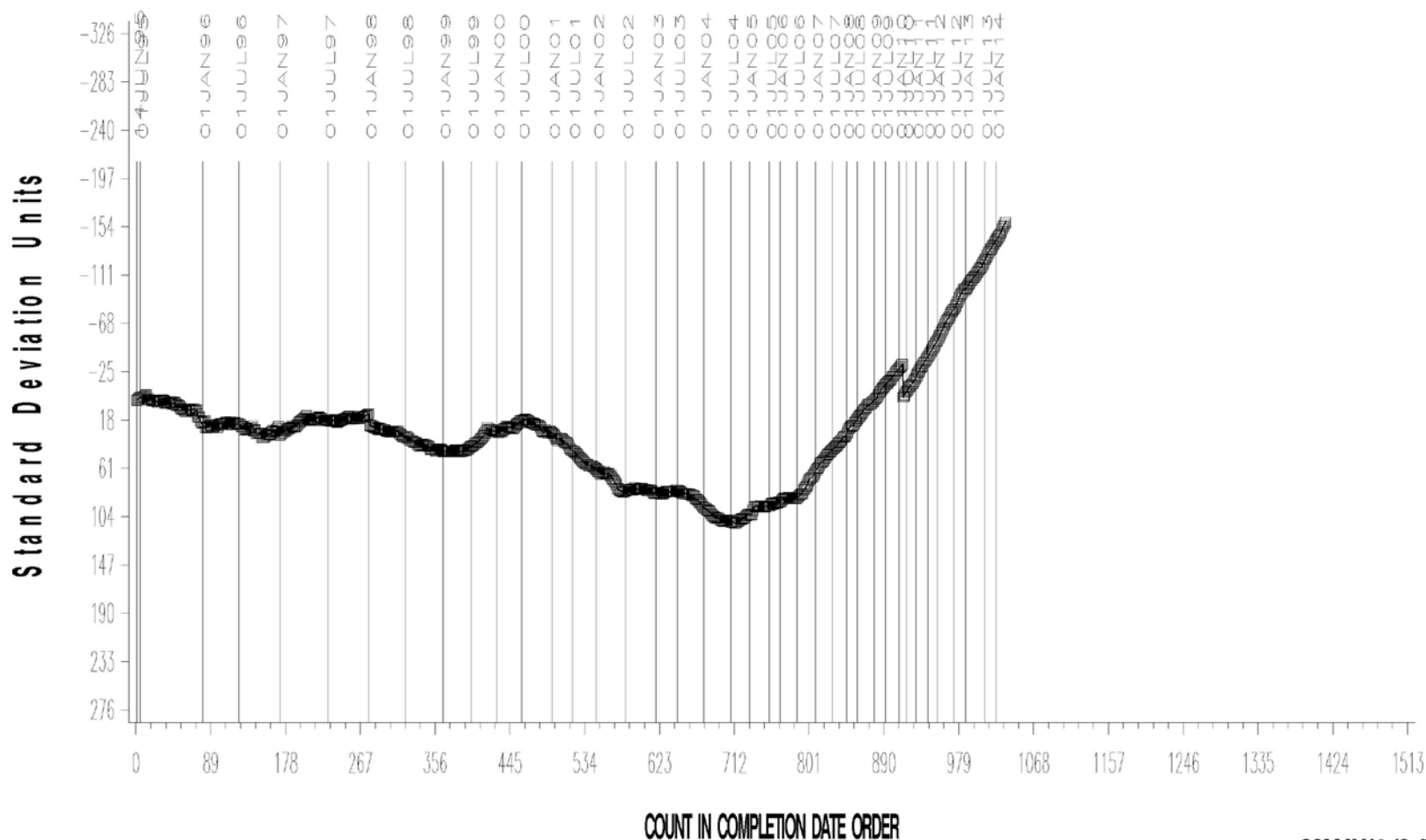
# CBT (D 5968)

CBT INDUSTRY OPERATIONALLY VALID DATA



COPPER CHANGE (ppm)

CUSUM Severity Analysis



20MAY14:10:17

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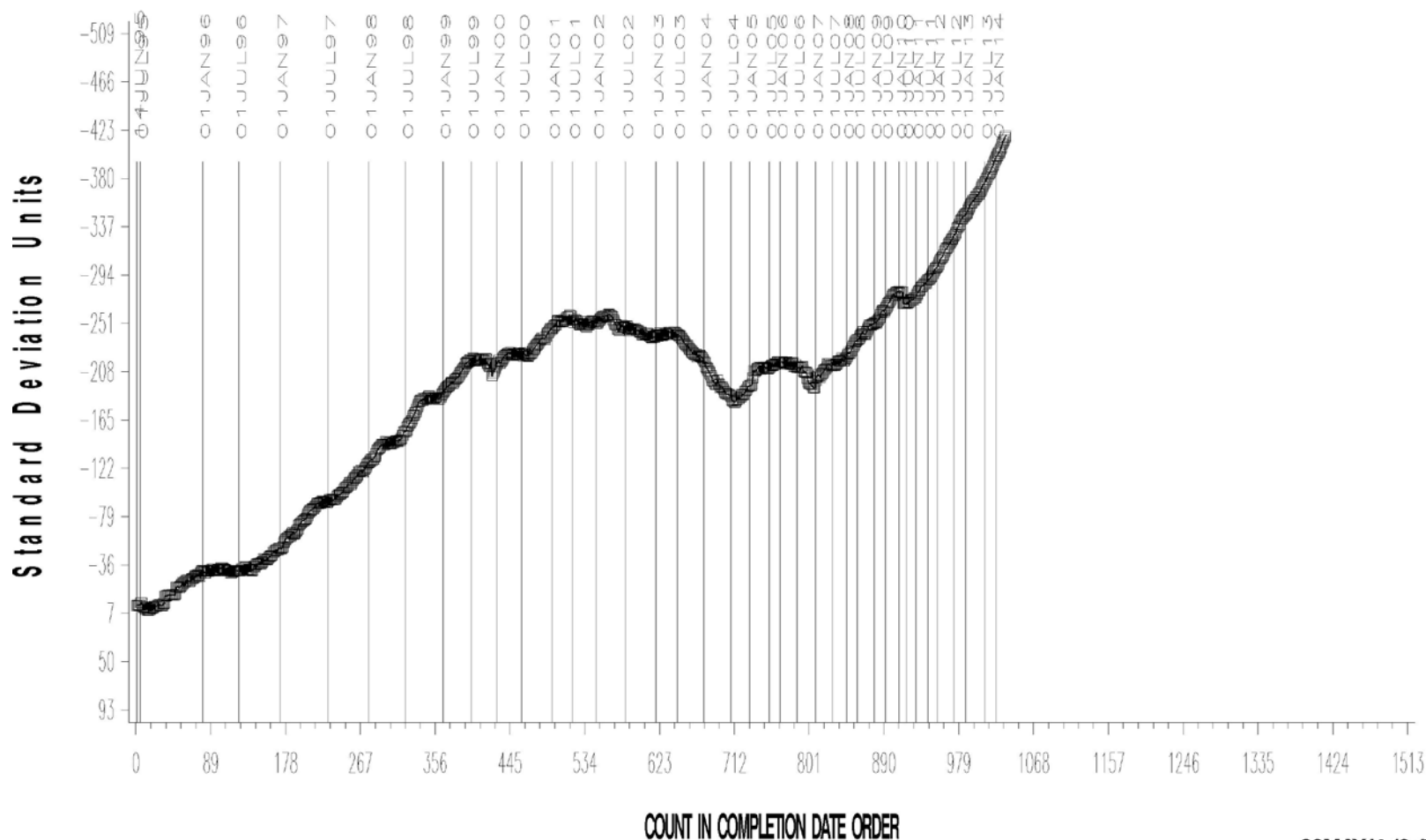
# CBT (D 5968)

CBT INDUSTRY OPERATIONALLY VALID DATA



LEAD CHANGE (ppm)

CUSUM Severity Analysis



20MAY14:10:17

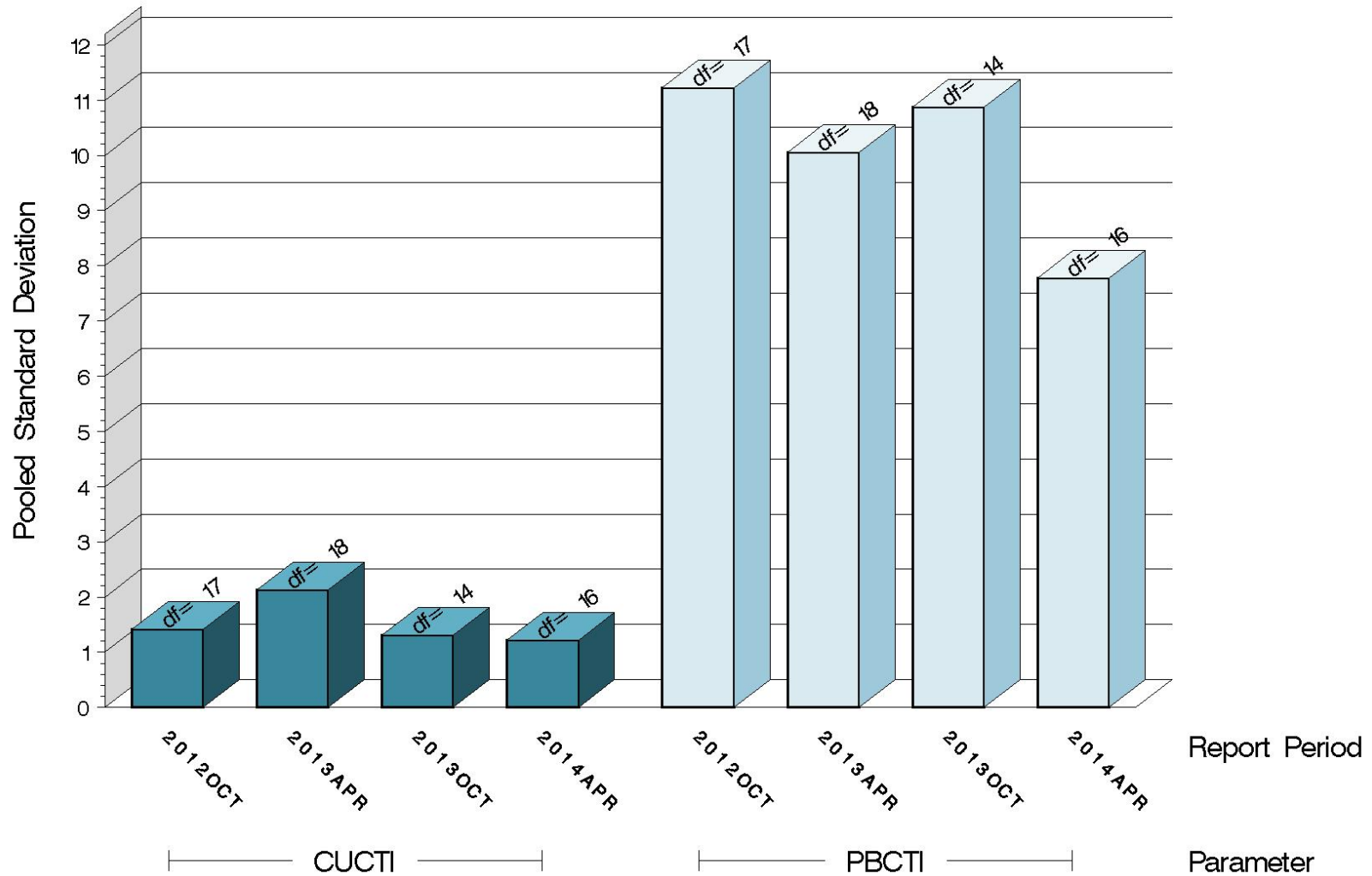
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# CBT (D 5968)

## TEST PRECISION

POOLED STANDARD DEVIATION  
BY SIX-MONTH ASTM REPORT PERIOD



10:04:51 20MAY2014

# CBT (D 5968)

## SUMMARY OF SEVERITY & PRECISION

### Severity

Over the course of this report period, both copper and lead severity, as measured by cusum plotting, continued the existing mild trend.

### Precision

Pooled s for this period is 1.22 for copper and 7.78 for lead.

Precision, as measured by pooled standard deviation, is slightly better than previous periods for both copper and lead, but is still within historical levels.

# CBT (D 5968)

## INFORMATION LETTERS

No CBT Information Letters were issued this period.

# CBT (D 5968)

## STATUS OF REFERENCE OIL SUPPLY

| Oil | Samples @<br>Labs | @ TMC             |         |
|-----|-------------------|-------------------|---------|
|     |                   | Samples<br>(4 oz) | Gallons |
| 43  | 38                | 1353              | 42.3    |