



## Test Monitoring Center

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

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

MEMORANDUM: 16-032  
DATE: October 17, 2016  
TO: Gil Reinhard, Chairman, CBT Surveillance Panel  
FROM: Michael T. Kasimirsky *Michael T. Kasimirsky*  
SUBJECT: CBT Testing from April 1, 2016 through September 30, 2016

A total of 13 CBT tests were reported to the Test Monitoring Center during the report period from April 1, 2016 through September 30, 2016.

Please find attached a summary of testing activity this period.

MTK/mtk/astm1016.doc/mem16-032.mtk.doc

cc: F. M. Farber

J. A. Clark

CBT Surveillance Panel

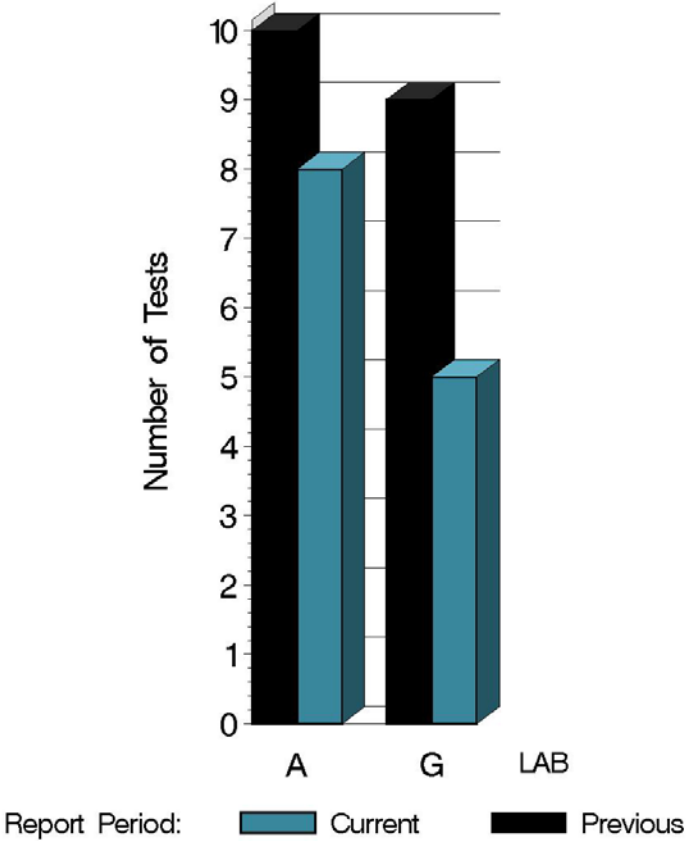
<ftp://ftp.astmtmc.cmu.edu/docs/bench/cbt/semiannualreports/cbt-10-2016.pdf>

Distribution: email

# CBT (D 5968)

Reporting Data	
Number of Labs	2

NUMBER OF TESTS REPORTED  
BY LAB AND REPORT PERIOD



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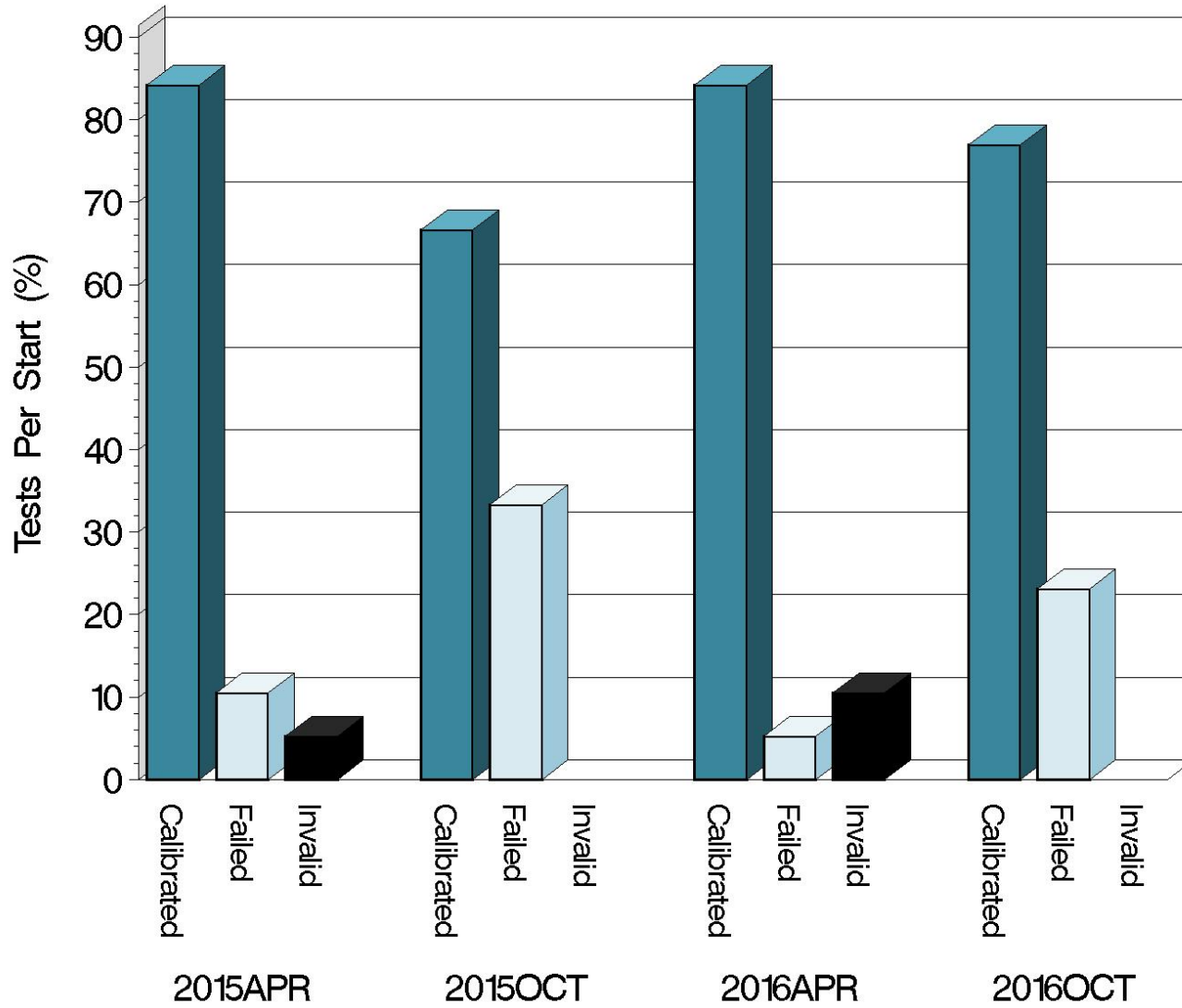
# CBT (D 5968)

## Test Distribution by Validity

		Number of Tests
Accepted for Calibration	AC	10
Rejected	OC	3
Invalidated	LC	0
Aborted	XC	0
Hardware Approval run	NI	0
Unacceptable Approval run	MI	0
Invalid Approval run	LI	0
<hr/>		
Total		13

# CBT (D 5968)

## CALIBRATION ATTEMPT SUMMARY



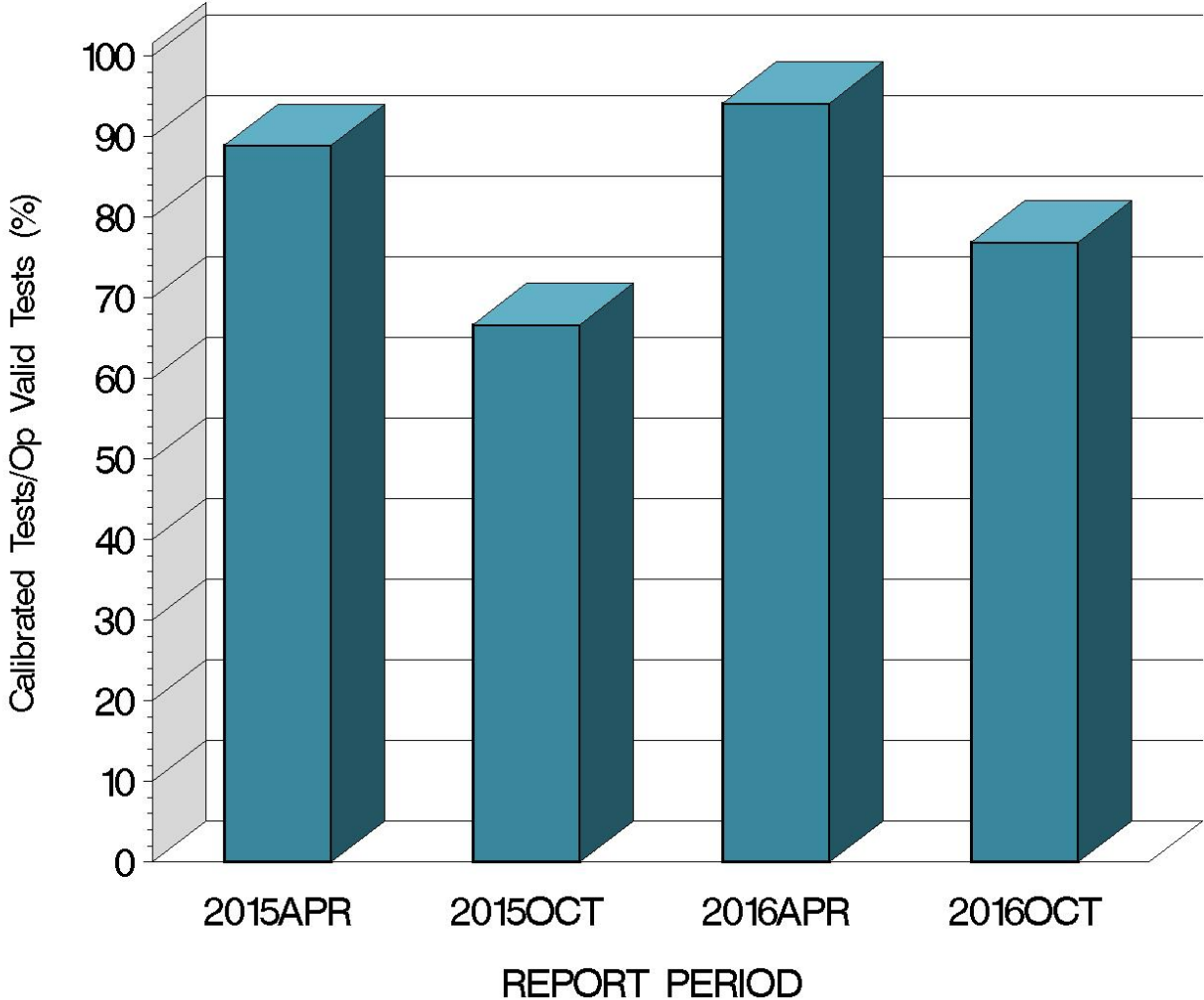
Resolution

Report Period

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# CBT (D 5968)

OPERATIONALLY VALID TESTS  
MEETING ACCEPTANCE CRITERIA



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# CBT (D 5968)

## CAUSES FOR LOST TESTS

Summary of Reasons for Failed Tests	No. of Tests
Mild Copper Concentration	1
Mild Copper & Lead Concentration	2

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	8	-1.589	-2.26833
G	5	-1.563	-0.47867
Industry	13	-1.579	-1.58

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

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

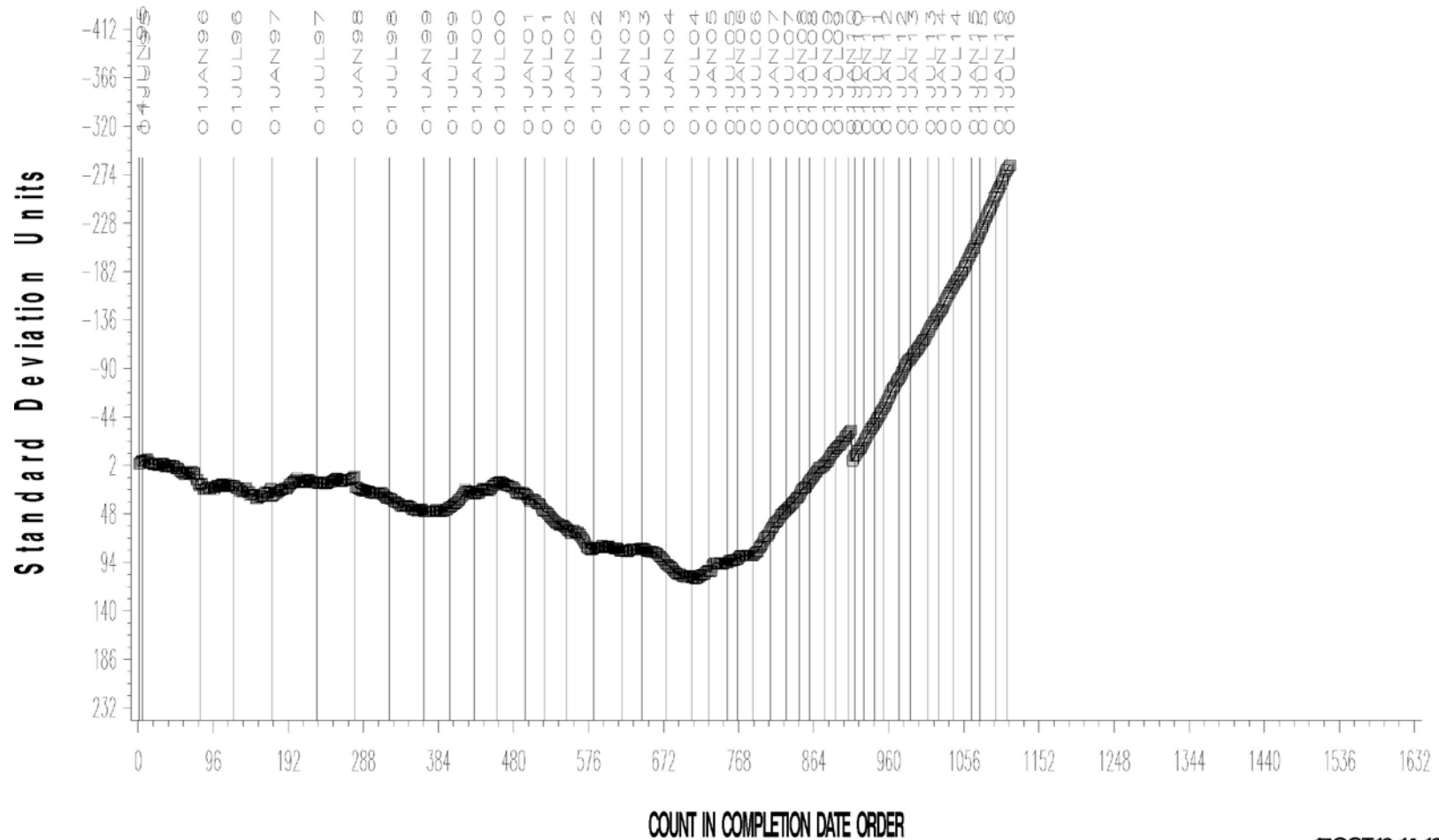
# CBT (D 5968)

CBT INDUSTRY OPERATIONALLY VALID DATA



COPPER CHANGE (ppm)

CUSUM Severity Analysis



17OCT16: 14:16



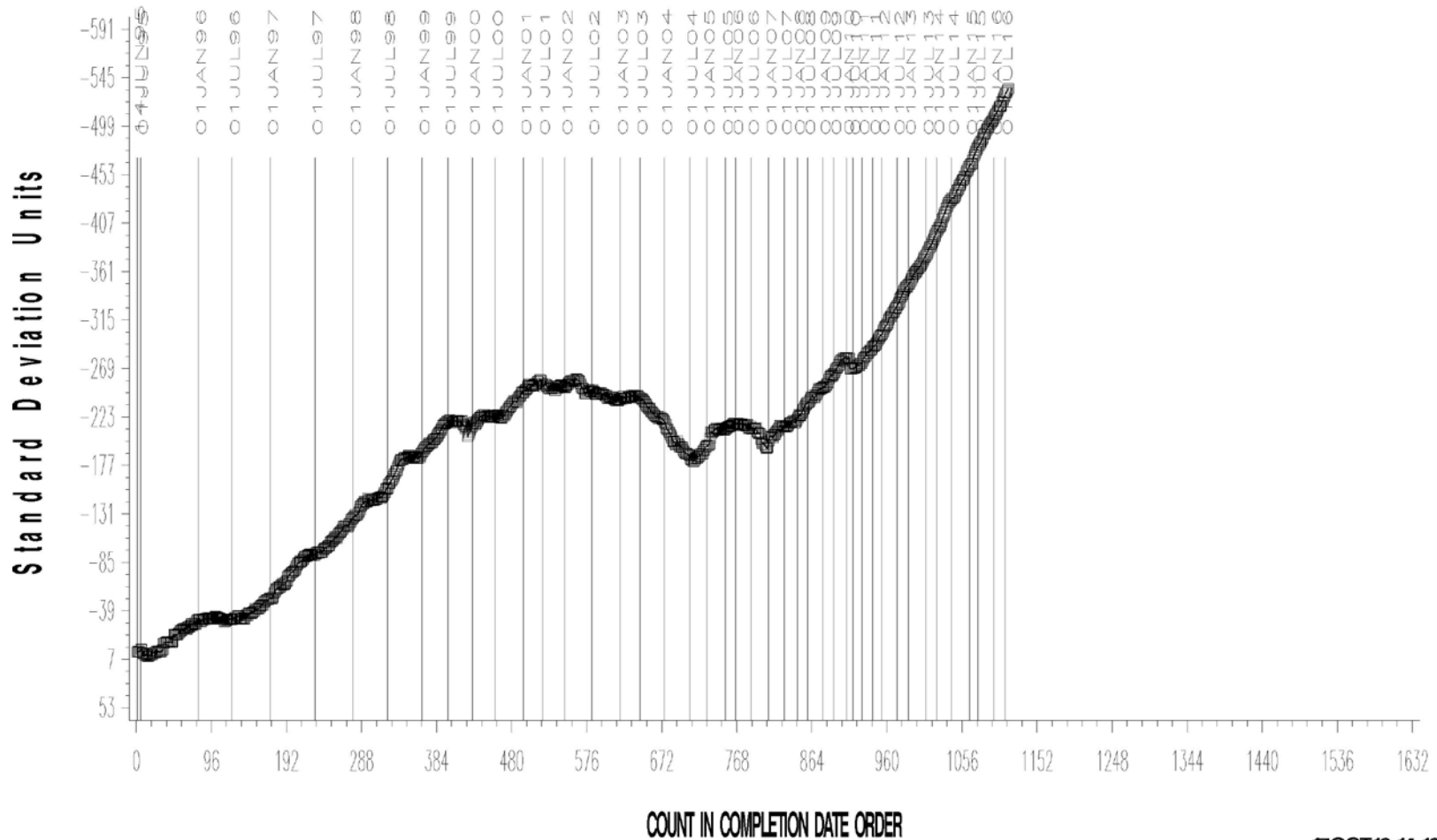
# CBT (D 5968)

CBT INDUSTRY OPERATIONALLY VALID DATA



LEAD CHANGE (ppm)

CUSUM Severity Analysis



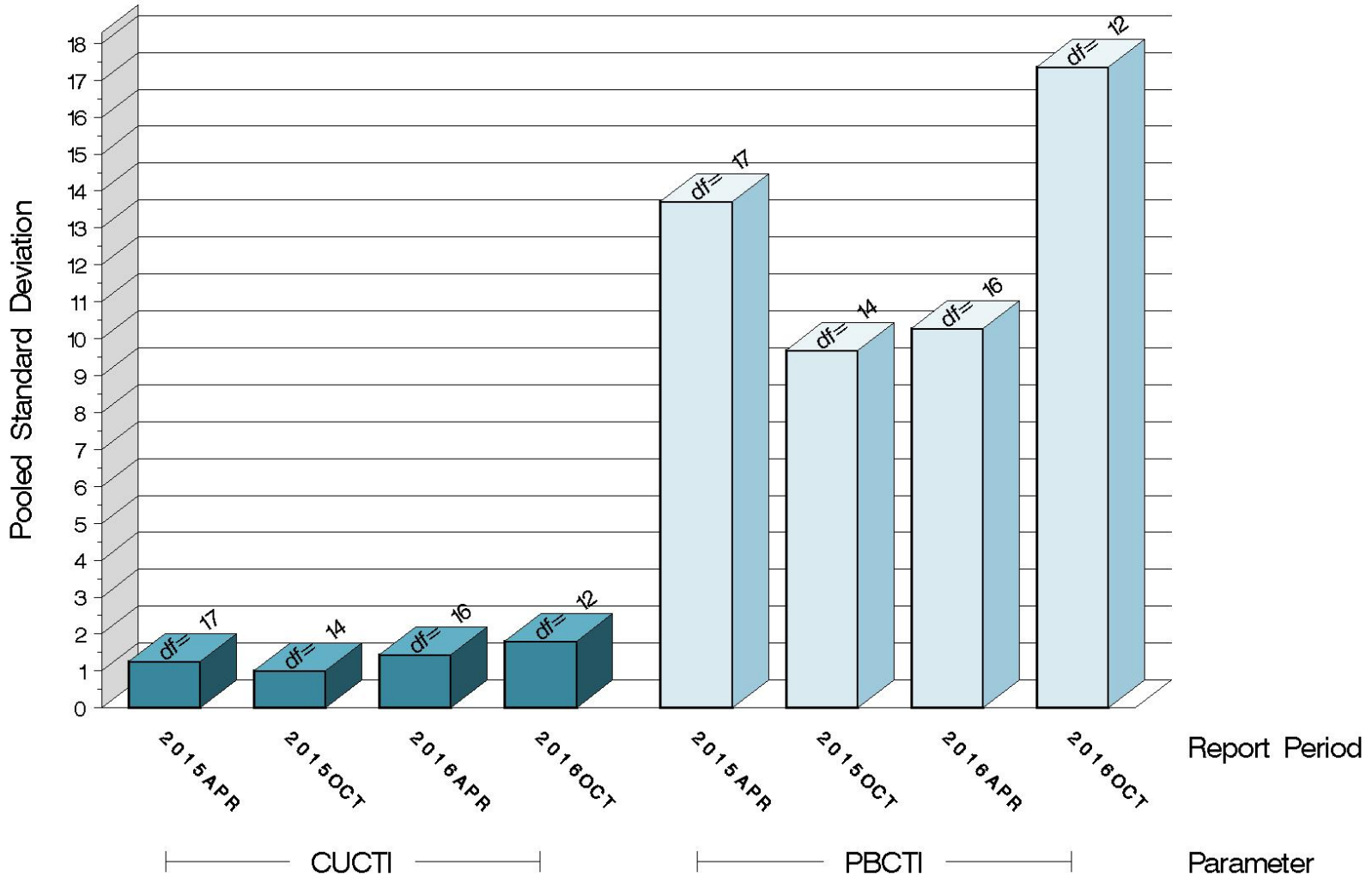
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# CBT (D 5968)

## TEST PRECISION

POOLED STANDARD DEVIATION  
BY SIX-MONTH ASTM REPORT PERIOD



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# 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 1.80 for copper and 17.36 for lead.

Precision, as measured by pooled standard deviation, is worse than previous periods for 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 @ Labs	@ TMC	
		Samples (4 oz)	Gallons
43	36	1273	39.8