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Test Monitoring Center

<http://astmtmc.cmu.edu>

ASTM Reference Testing Semi-Annual Report ASTM D6594 – HTCBT

April 2021

HTCBT Test Activity*

Test Status	Validity Code	Number of Tests
Acceptable Calibration Test	AC	238
Failed Calibration Test	OC	12
Operationally Invalid, by lab	LC	5
Aborted Calibration Test	XC	3
Acceptable Shakedown Run	NN	25
Unacceptable Shakedown Run	MN	45
Operationally Invalid, lab Shakedown Run	LN	1
Total		329

- 9 labs reported data
- Unable to coordinate with SP chair to add HTCBT to the LTMS

*October 1, 2020 – March 31, 2021

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HTCBT Failed Tests

Failed Parameter	Number of Tests
Severe Lead Concentration	9
Severe Copper Concentration	1
Severe Copper & Lead Concentration	1
Mild Copper Concentration	1
Total	12

HTCBBT Failed Tests by Lab

Failed Parameter	LTMS Lab						#
	A	B	G	I	V	BB	
Severe Lead Concentration	1	0	5	0	0	3	9
Severe Copper Concentration	0	0	0	0	0	1	1
Severe Copper & Lead Concentration	0	0	0	0	0	1	1
Mild Copper Concentration	0	0	0	1	0	0	1
Total	1	0	5	1	0	5	12

HTCBT Lost Tests*

Status	Cause	#
Invalid	Heater Malfunction	1
Invalid	Airflow Control Problems	2
Invalid	Exceeded Test Time Length	1
Invalid	Improper Coupon	1
Invalid	Power Outage	2
Invalid	Sample Contamination	1
Total		8

*Invalid and aborted calibration tests

HTCGBT Lost Tests by Lab

Cause	LTMS Lab						#
	A	B	G	I	L	BC	
Heater Malfunction	1	0	0	0	0	0	1
Airflow Control Problems	1	0	1	0	0	0	2
Exceeded Test Time Length	1	0	0	0	0	0	1
Improper Coupon	0	0	0	0	0	1	1
Power Outage	0	0	2	0	0	0	2
Sample Contamination	1	0	0	0	0	0	1
Total	4	0	3	0	0	1	8

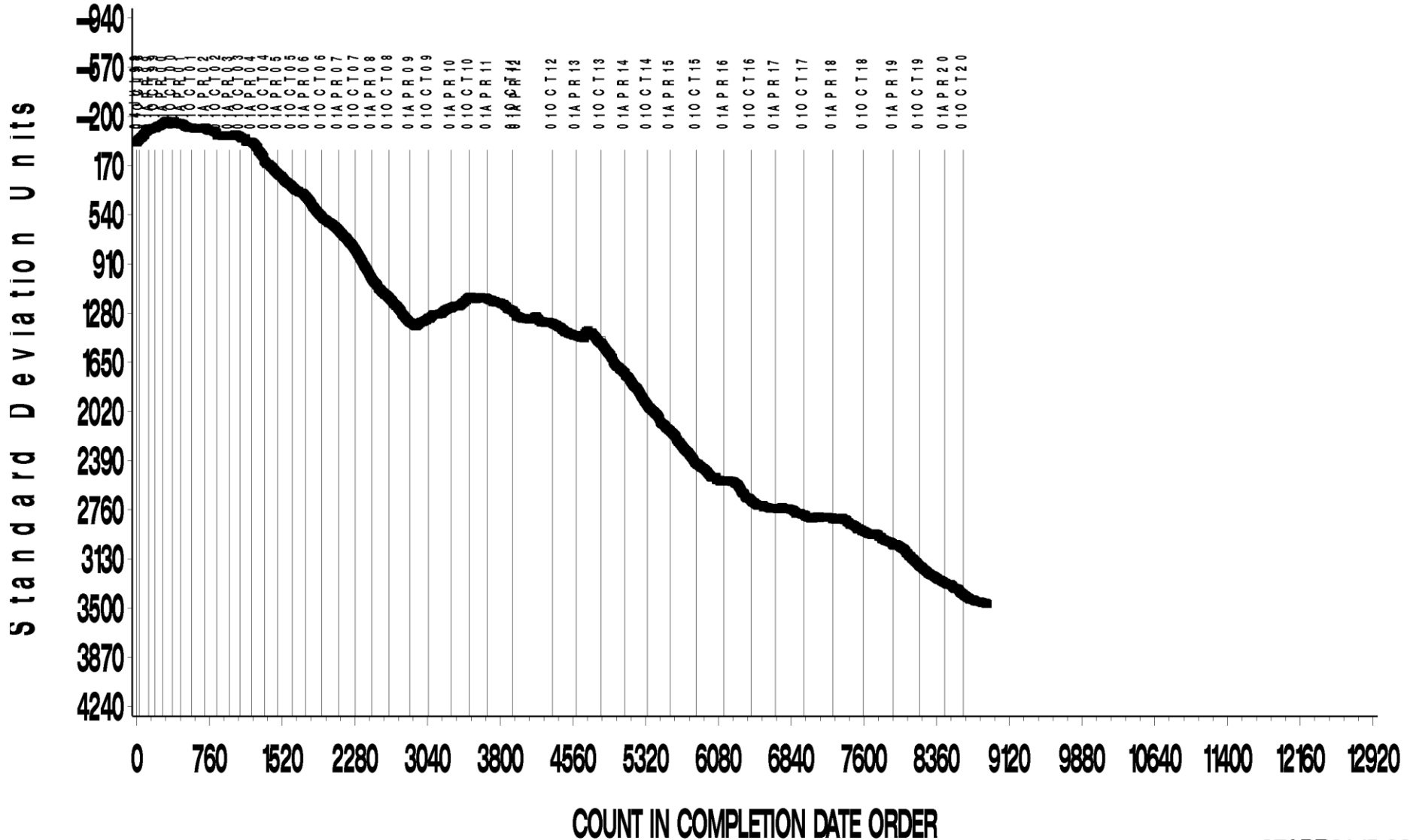
HTCBT Test Severity

- ▶ Copper concentration trending severe
- ▶ Lead concentration trending severe

COPPER CHANGE (ppm)

CUSUM Severity Analysis

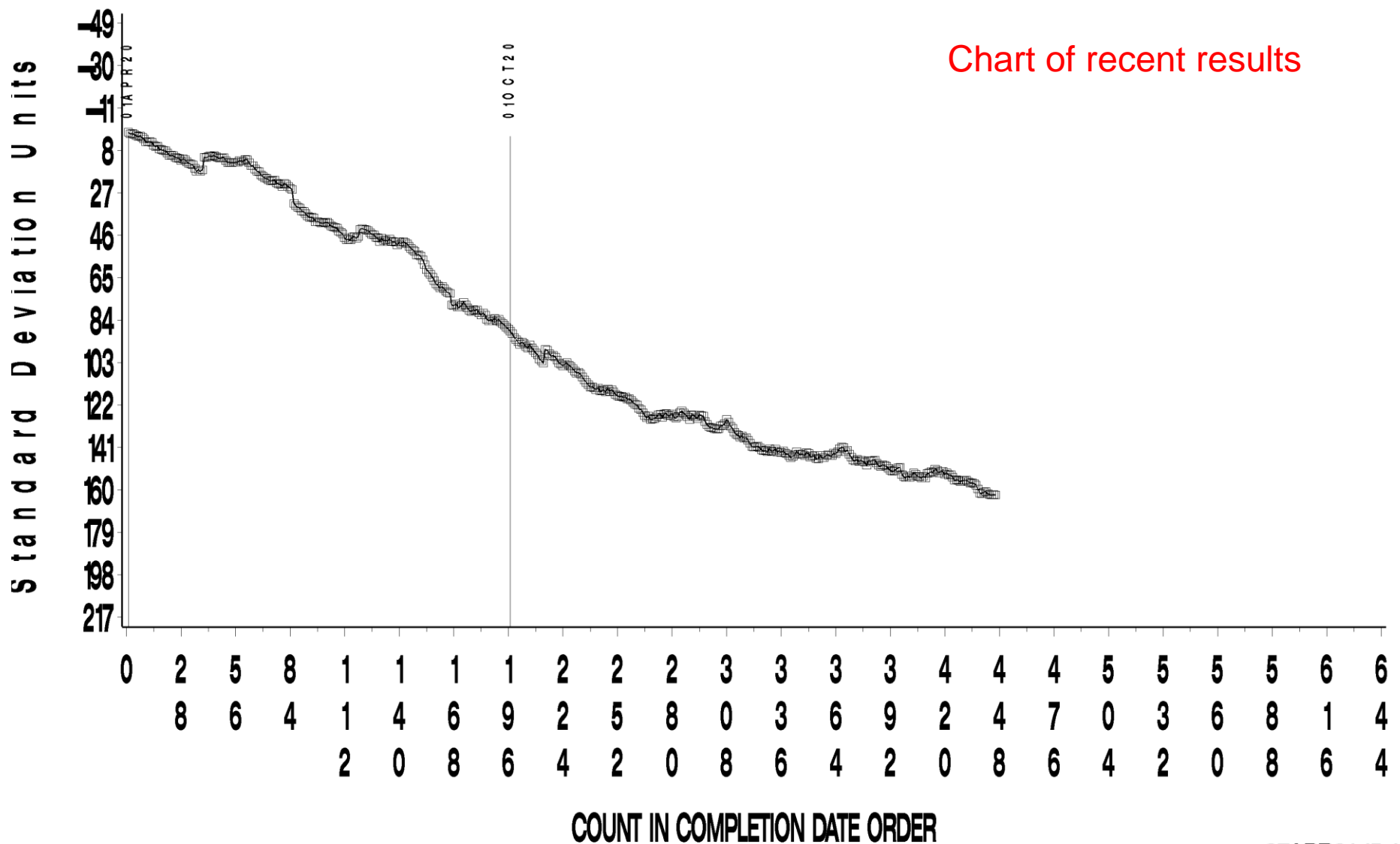
Historical Chart



COPPER CHANGE (ppm)

CUSUM Severity Analysis

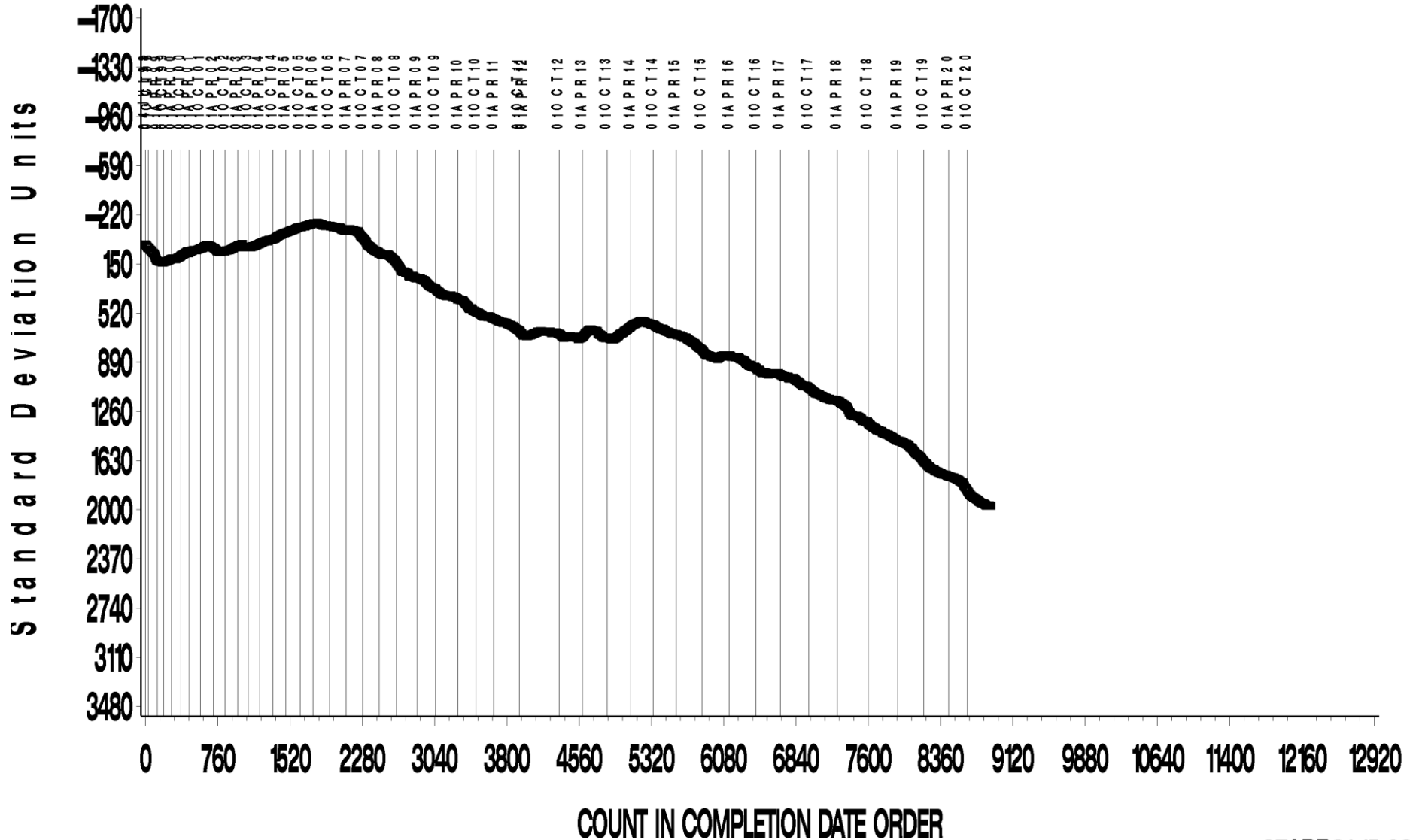
Chart of recent results



LEAD CHANGE (ppm)

CUSUM Severity Analysis

Historical Chart



LEAD CHANGE (ppm)

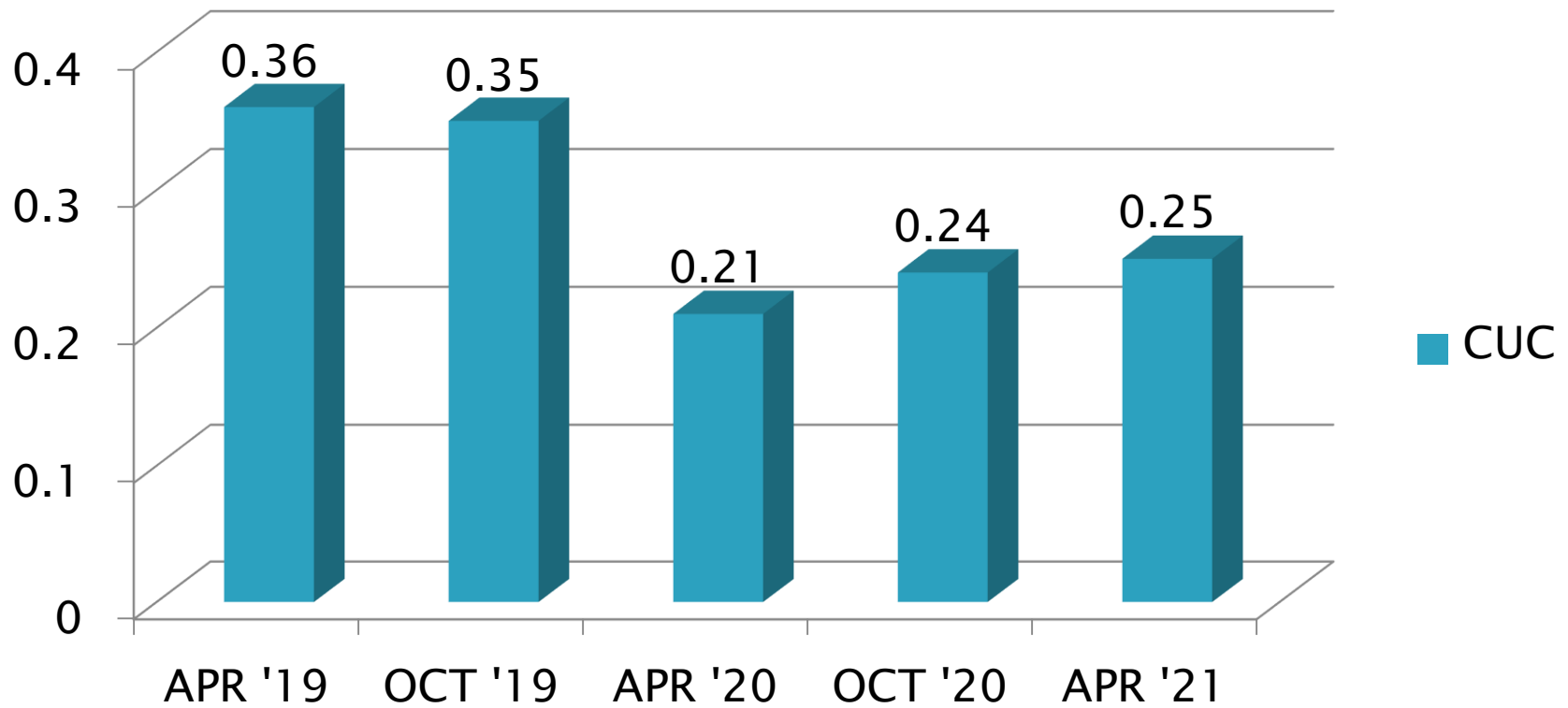
CUSUM Severity Analysis

Chart of recent results



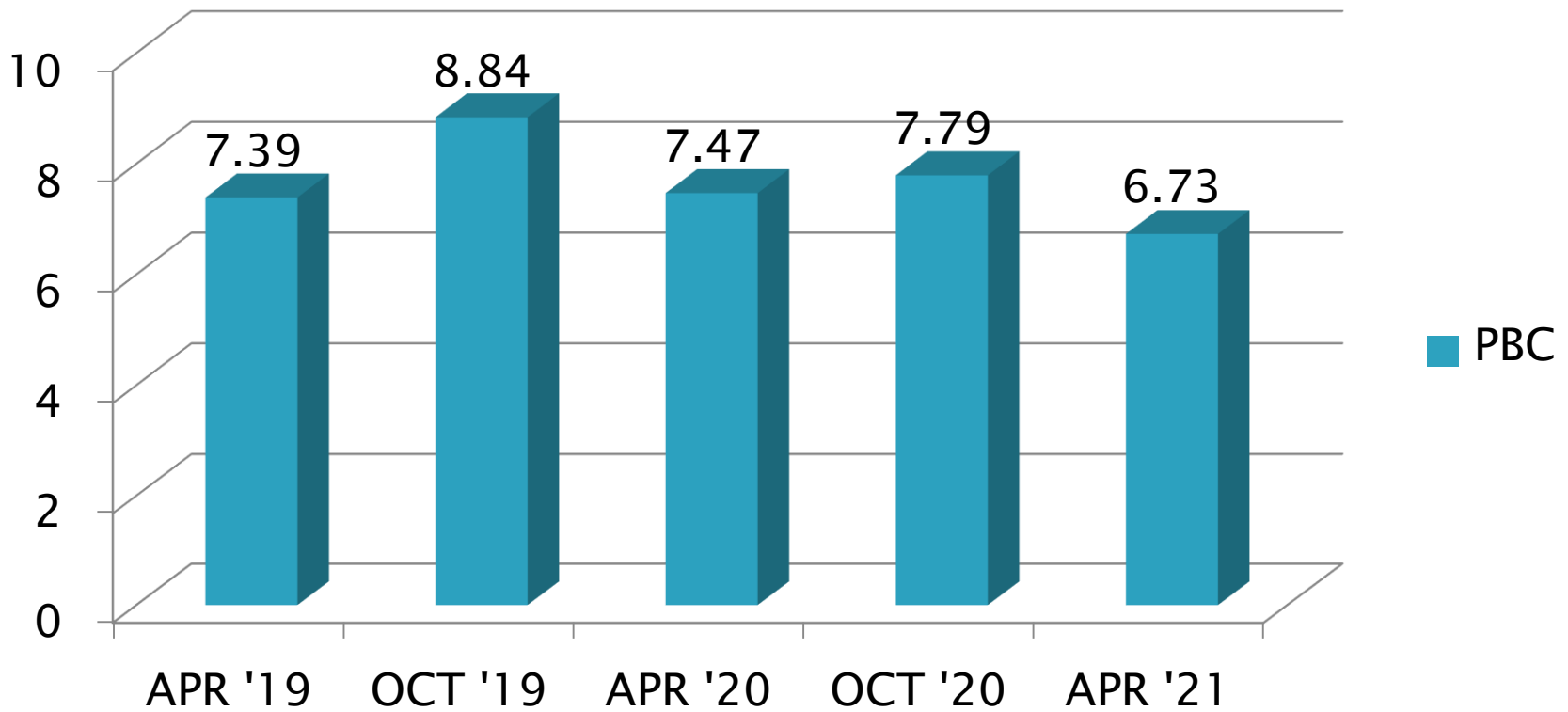
HTCBT Precision Estimates

CUC



HTCBT Precision Estimates

PBC



Information Letters*

Test	Date	IL	Topic
			No information letters this period.

*Available from TMC Website

Reference Oil Inventory Estimated Life

Oil	TMC Inventory (gallons)	Quantity Shipped in last 6 months (gallons)	Lab Inventory (samples)	Estimated Life
44-4	14.8	2.0	76	2.5 years
1005-5	24.8	7.4	305	3 years

Miscellaneous Information

- ▶ Available on TMC Website:
 - Oil Assignment Request and Test File Upload
 - Live Reference Test Data Bases
 - Surveillance Panel Meeting Minutes
- ▶ www.astmtmc.cmu.edu



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