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Test Monitoring Center

<http://astmtmc.cmu.edu>

ASTM Reference Testing Semi-Annual Report D7216 LDEOC

Spring 2021

LDEOC Test Activity*

Test Status		Ethylene Acrylate	Fluoroelast.	Nitrile	Polyacrylate	Silicone	Total
Acceptable Calibration Test	AC	67	70	80	72	84	373
Failed Calibration Test	OC	3	0	2	0	3	8
Operationally Invalid, by lab	LC	0	0	0	0	0	0
Operationally Invalid, by TMC	RC	0	0	0	0	0	0
Aborted	XC	2	2	2	2	2	10
Total		72	72	84	74	89	391

*October 1, 2020 – March 31, 2021

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LDEOC Lost Tests*

Validity	Cause	#
XC	Bath temperature off-spec	2
XC	Power Failure (mostly weather related)	8
	Total	10

*Invalid and aborted calibration tests

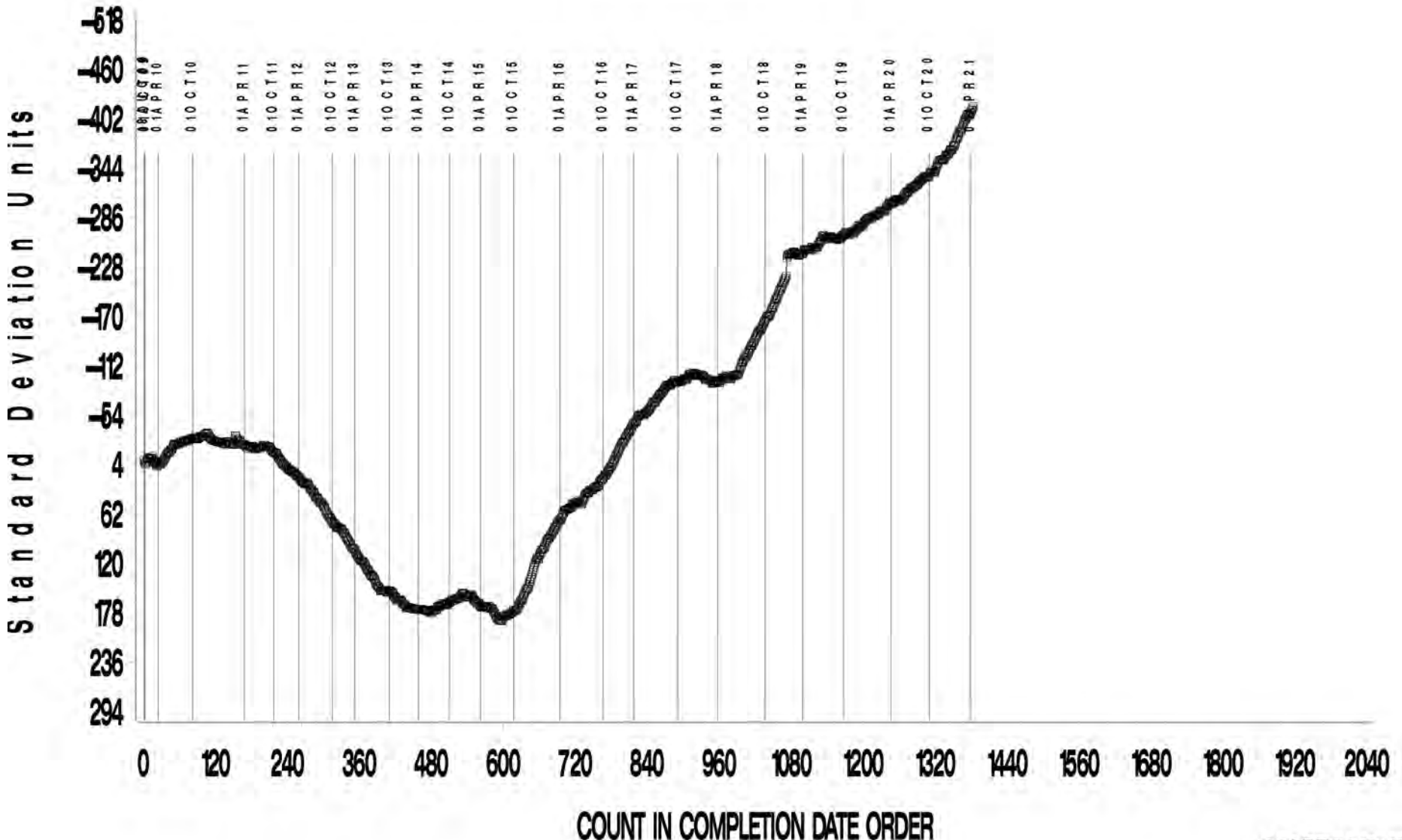
LDEOC Test Severity

▶ Ethylene Acrylate (AEM1)

Parameter	Period Mean Δ/s	Status
Volume Change	-1.08	Mild
Points Hardness Change	0.05	On-target
Tensile Strength Change	-0.07	On target

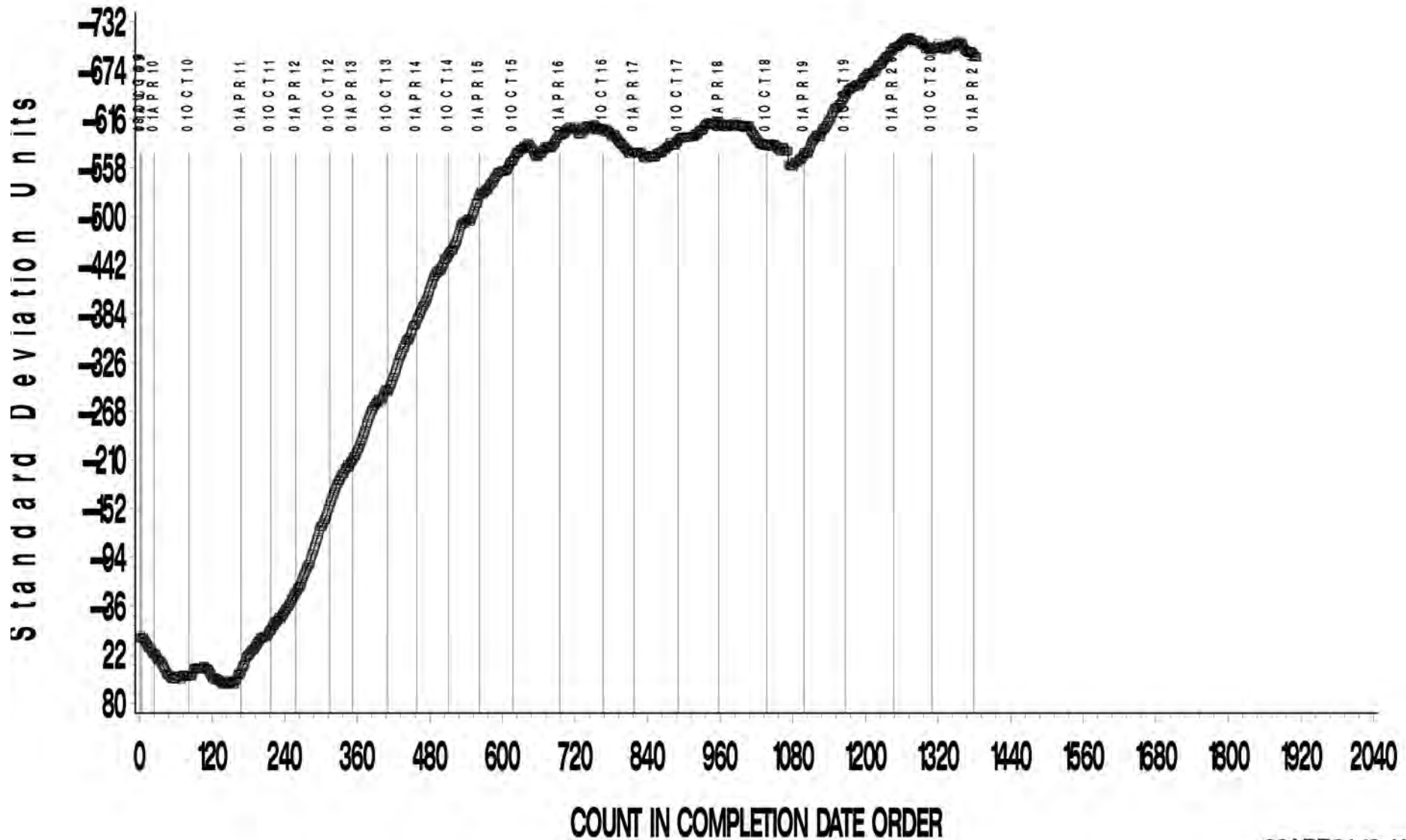
REF ETH ACRYLATE VOLUME CHANGE FINAL

CUSUM Severity Analysis



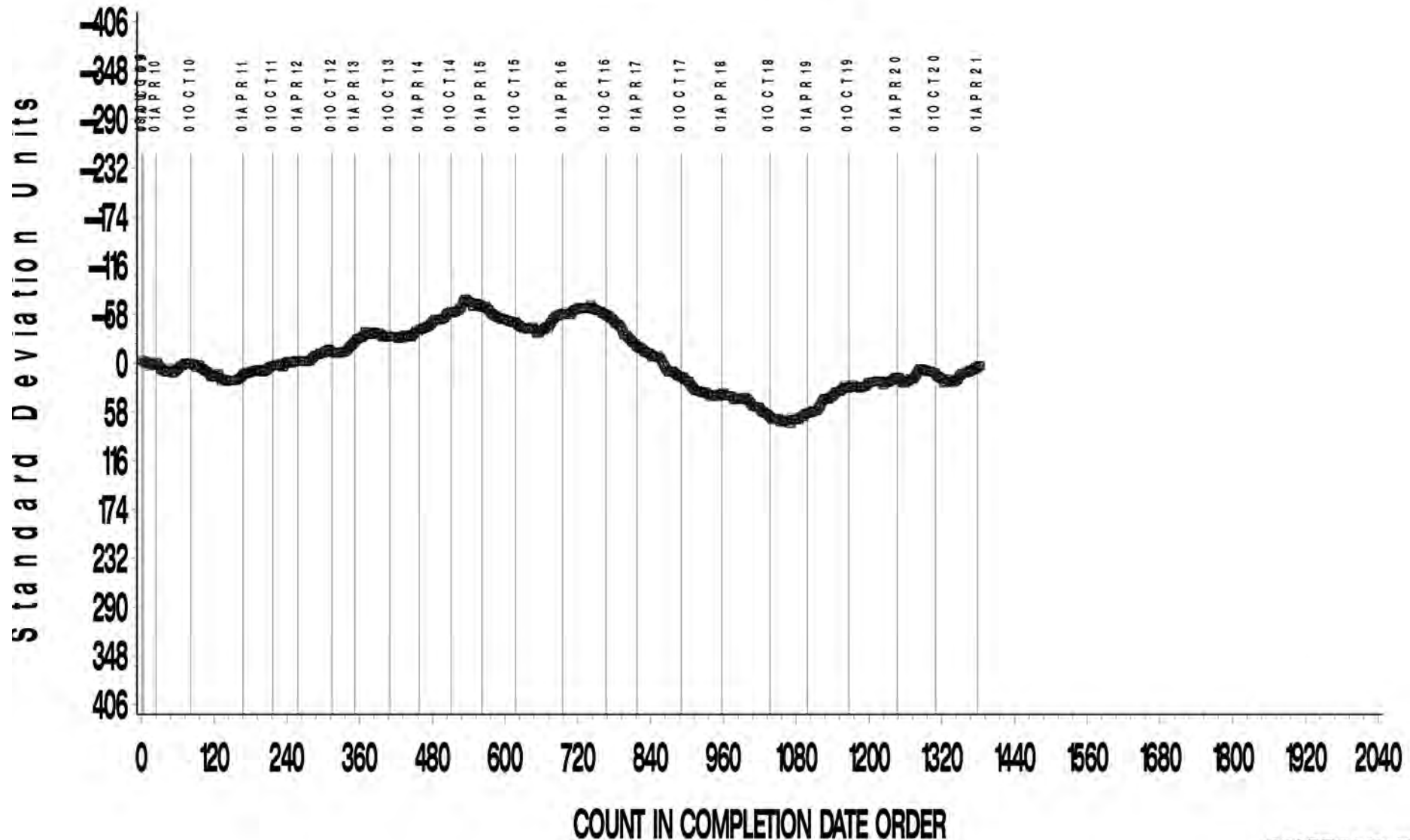
REF ETH ACRYLATE POINTS HARDNESS CHANGE FINAL

CUSUM Severity Analysis



REF ETH ACRYLATE TENSILE STRENGTH CHANGE FINAL

CUSUM Severity Analysis



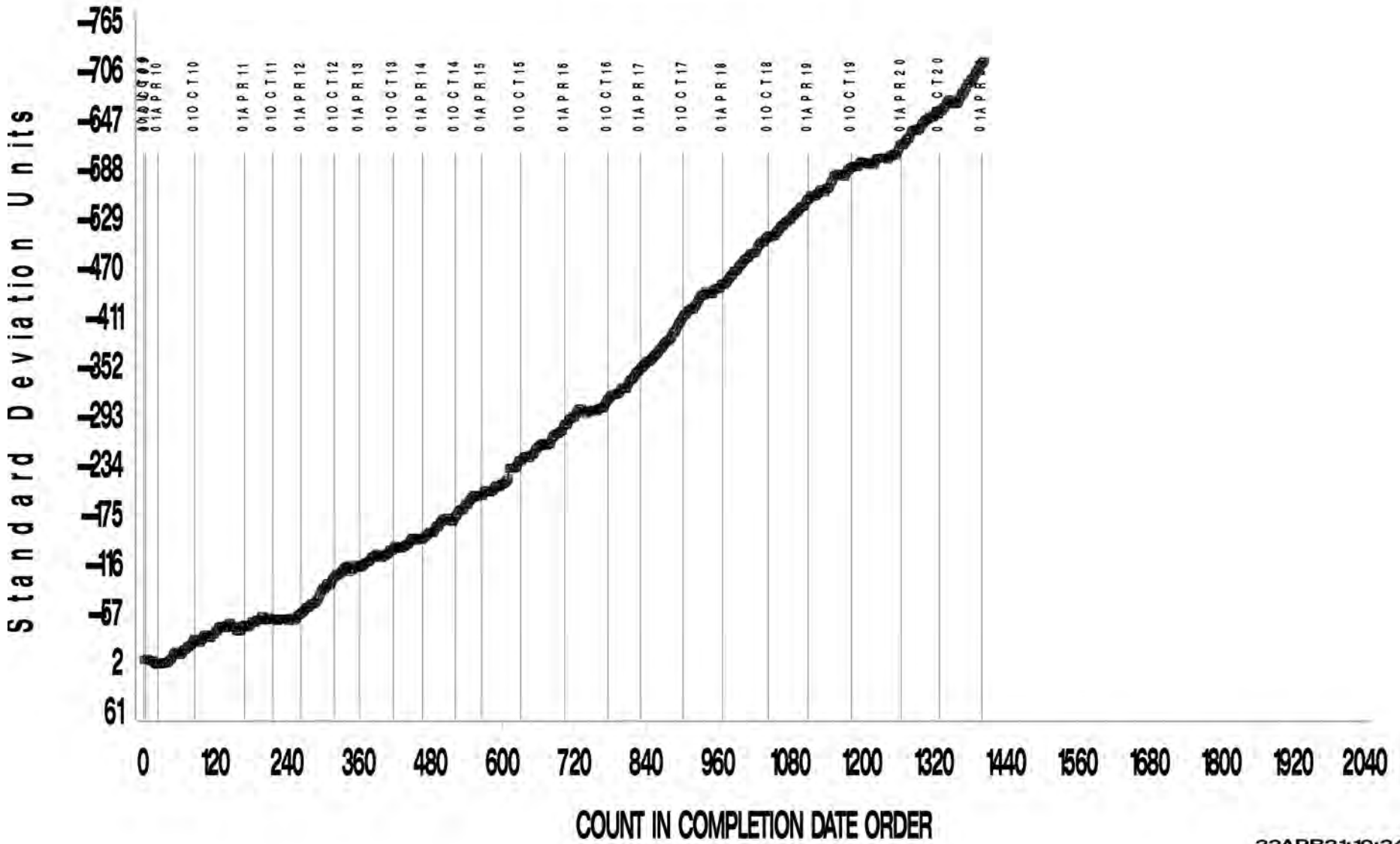
LDEOC Test Severity

▶ Fluoroelastomer (FKM1)

Parameter	Period Mean Δ /s	Status
Volume Change	-0.82	Mild
Points Hardness Change	-0.30	Mild
Tensile Strength Change	0.24	Severe

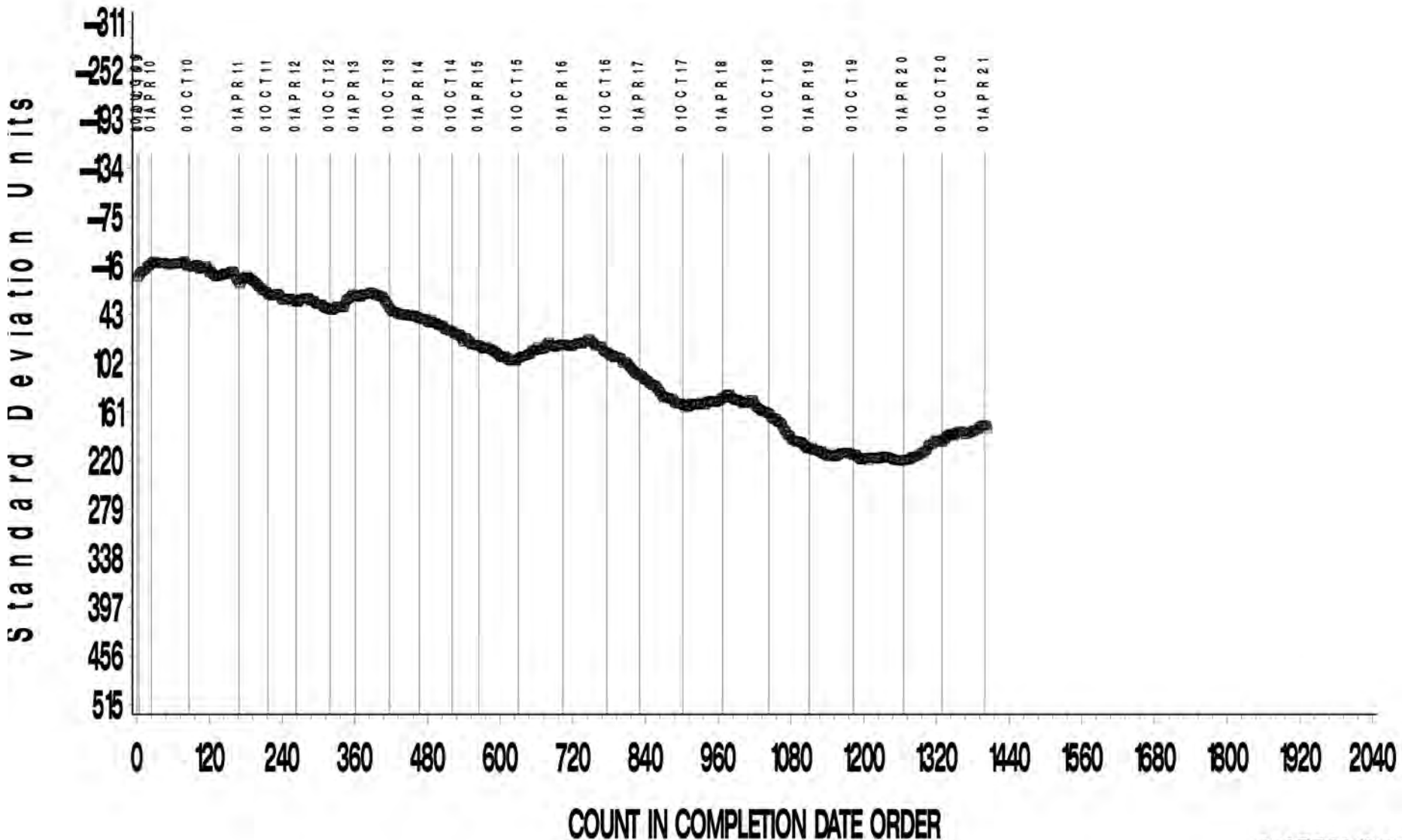
REF FLUOROELASTOMER VOLUME CHANGE FINAL

CUSUM Severity Analysis



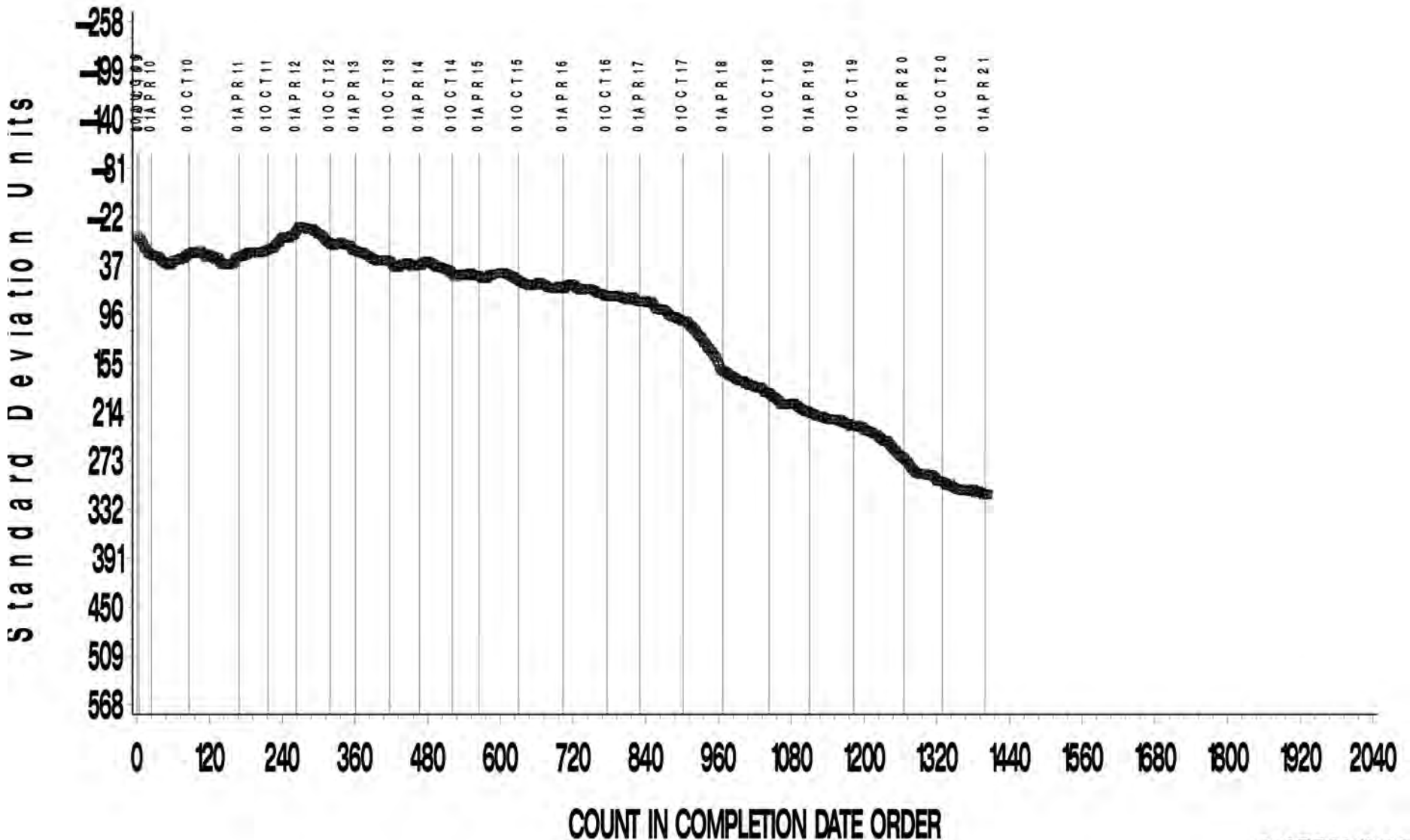
REF FLUORO POINTS HARDNESS CHANGE FINAL

CUSUM Severity Analysis



REF FLUORO TENSILE STRENGTH CHANGE AVERAGE

CUSUM Severity Analysis



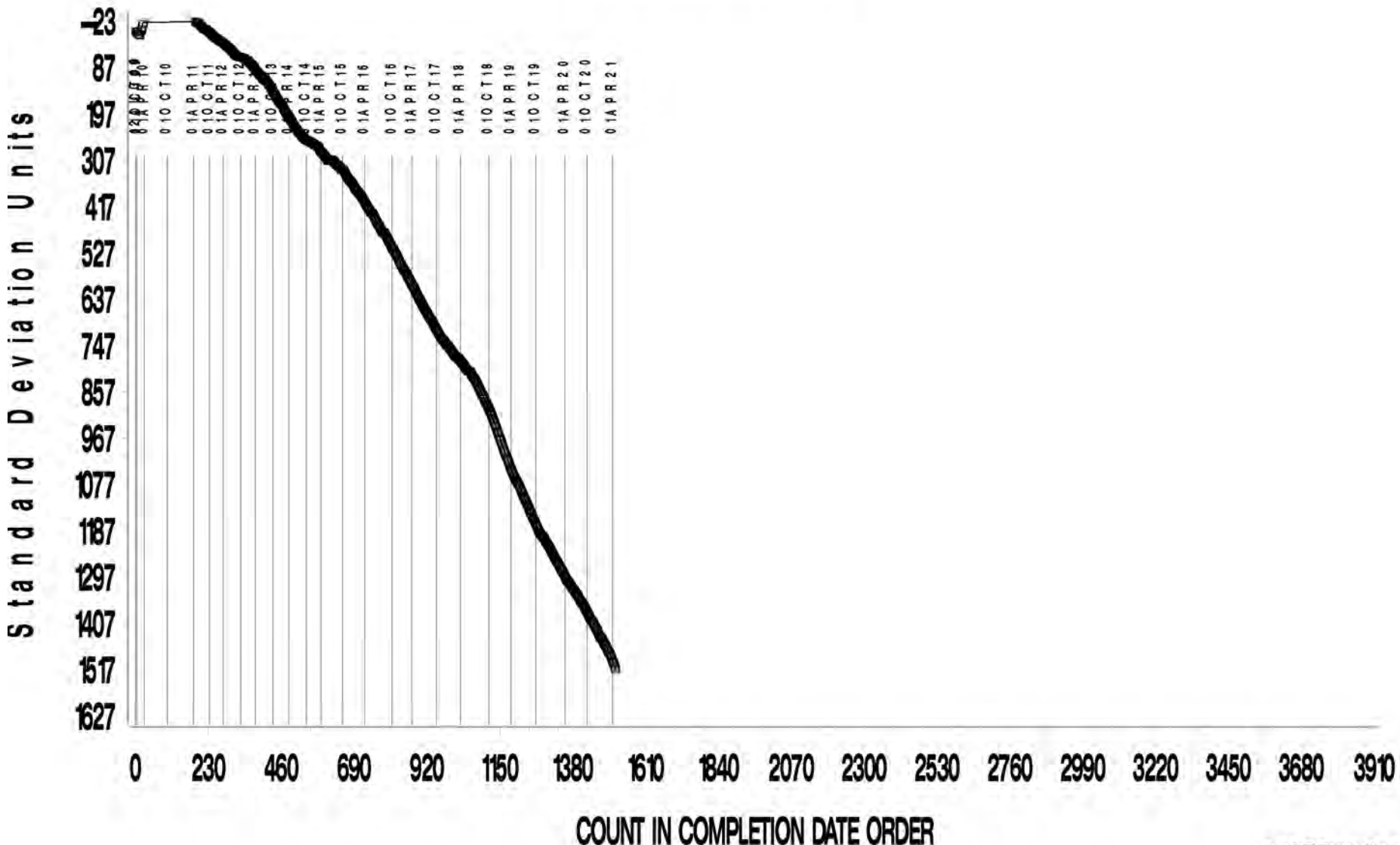
LDEOC Test Severity

▶ Nitrile (NBR1)

Parameter	Period Mean Δ/s	Status
Volume Change	1.21	Severe
Points Hardness Change	-0.21	Mild
Tensile Strength Change	-0.58	Mild

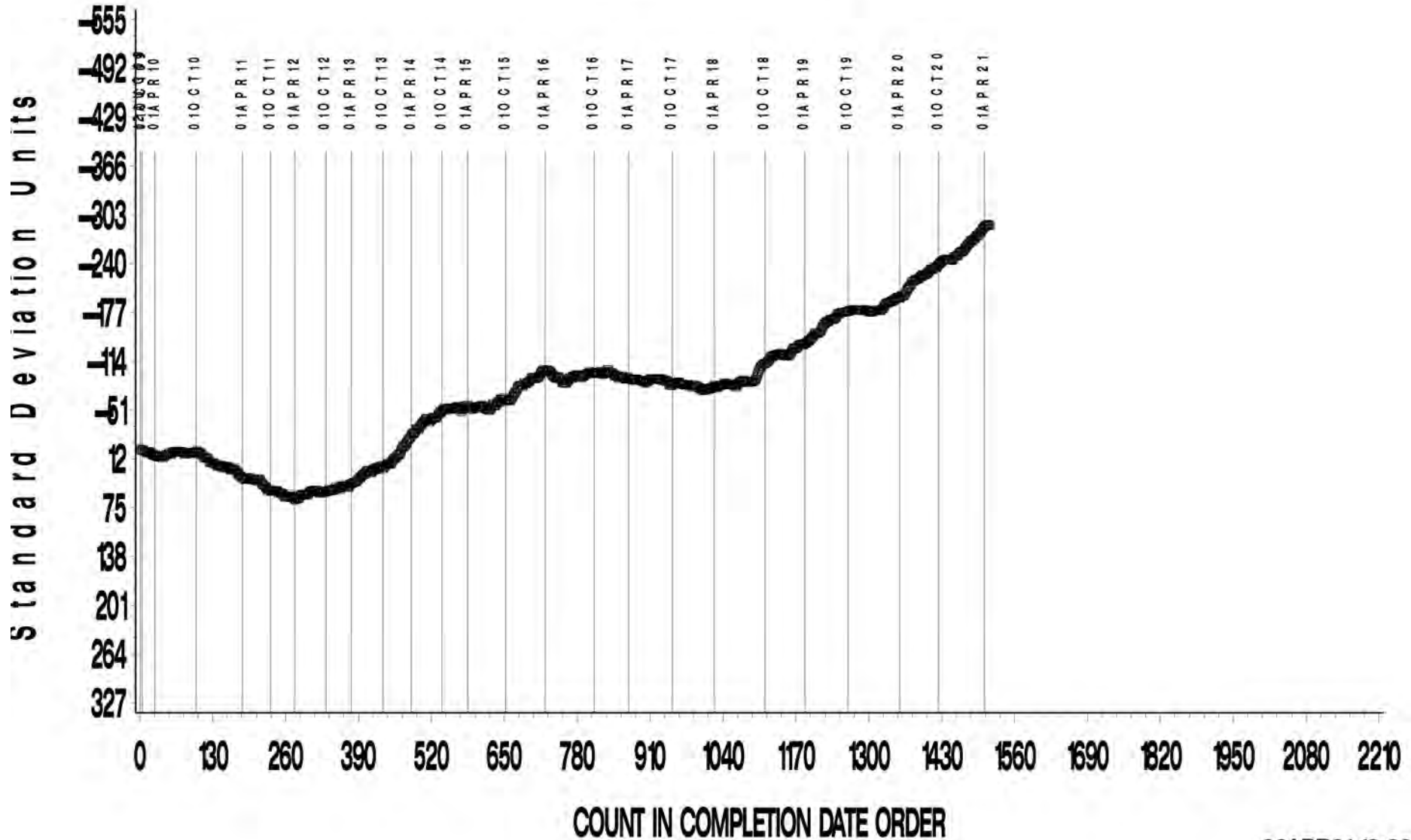
REFERENCE NITRILE VOLUME CHANGE FINAL

CUSUM Severity Analysis



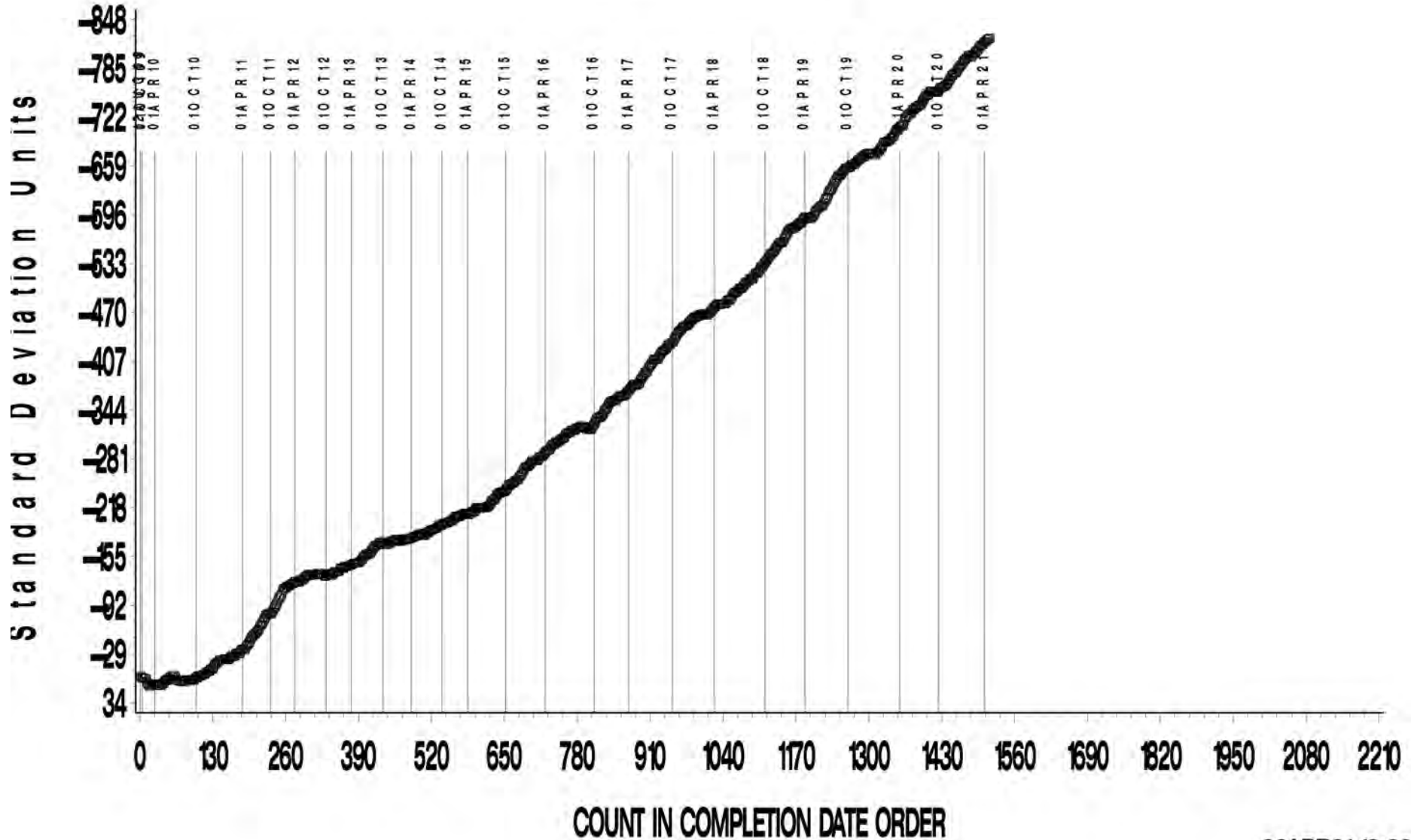
REF NITRILE POINTS HARDNESS CHANGE AVERAGE

CUSUM Severity Analysis



REF NITRILE TENSILE STRENGTH CHANGE FINAL

CUSUM Severity Analysis



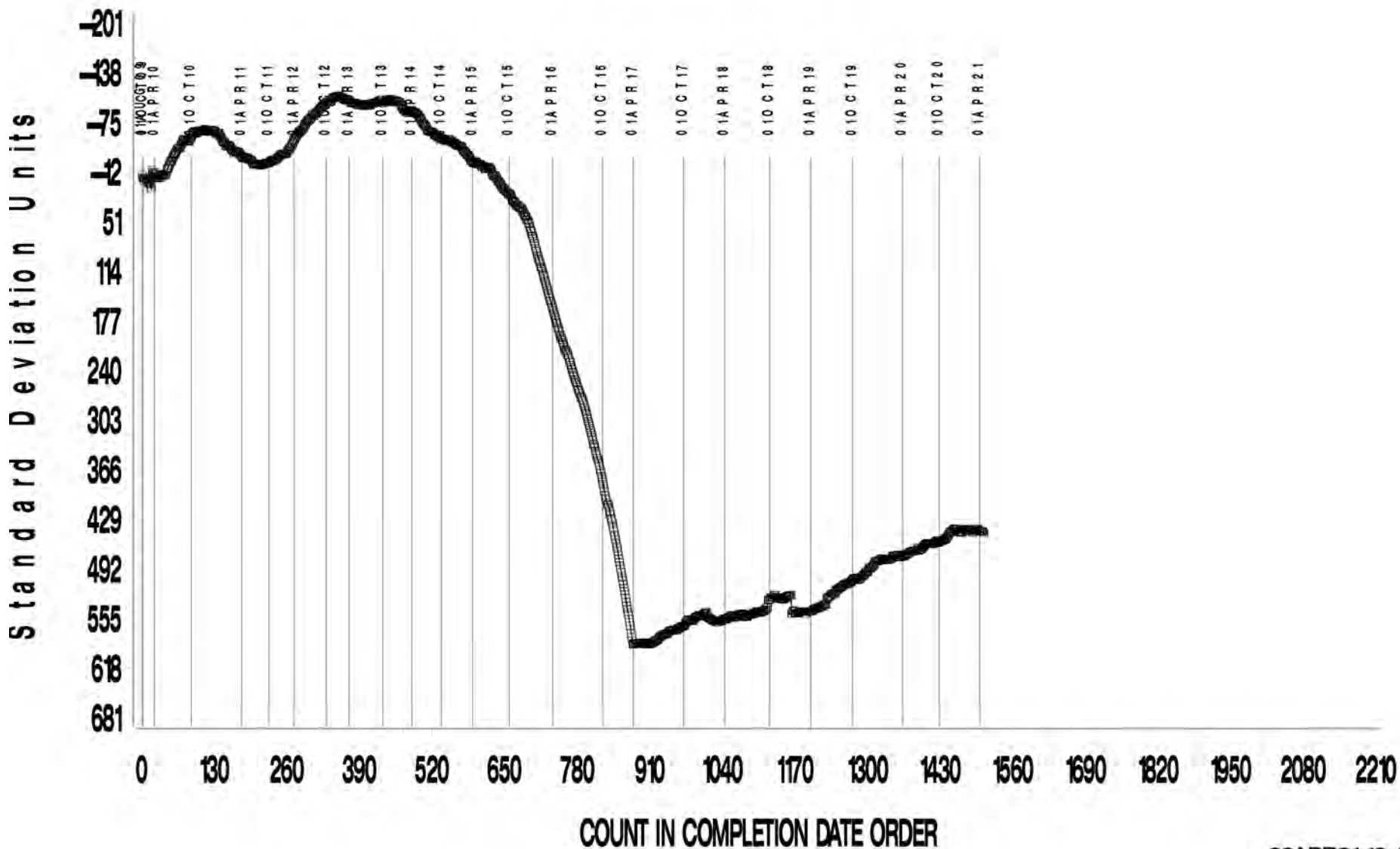
LDEOC Test Severity

▶ Polyacrylate (ACM1)

Parameter	Period Mean Δ/s	Status
Volume Change	-0.20	Mild
Points Hardness Change	-1.03	Mild
Tensile Strength Change	-0.47	Mild

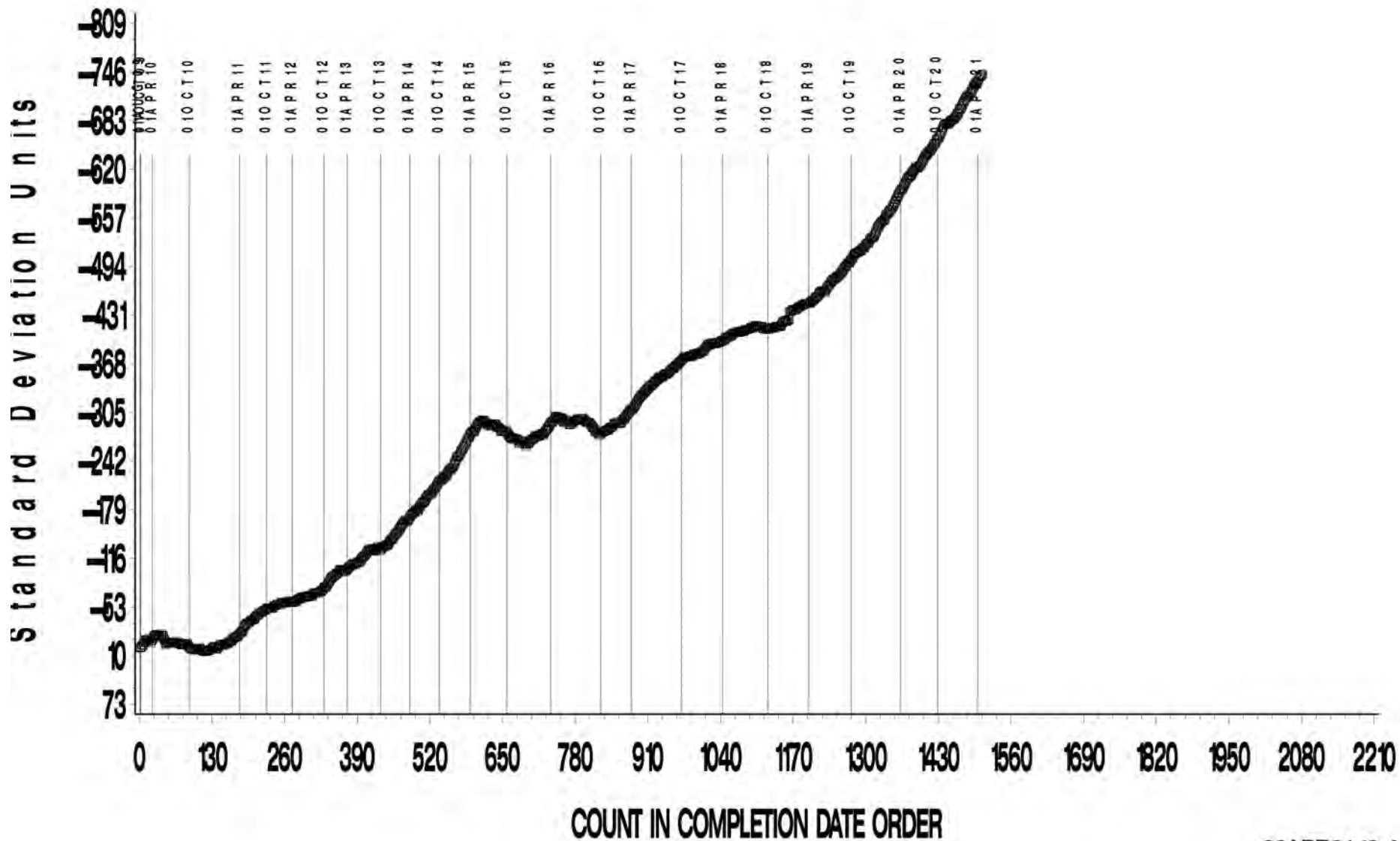
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CUSUM Severity Analysis



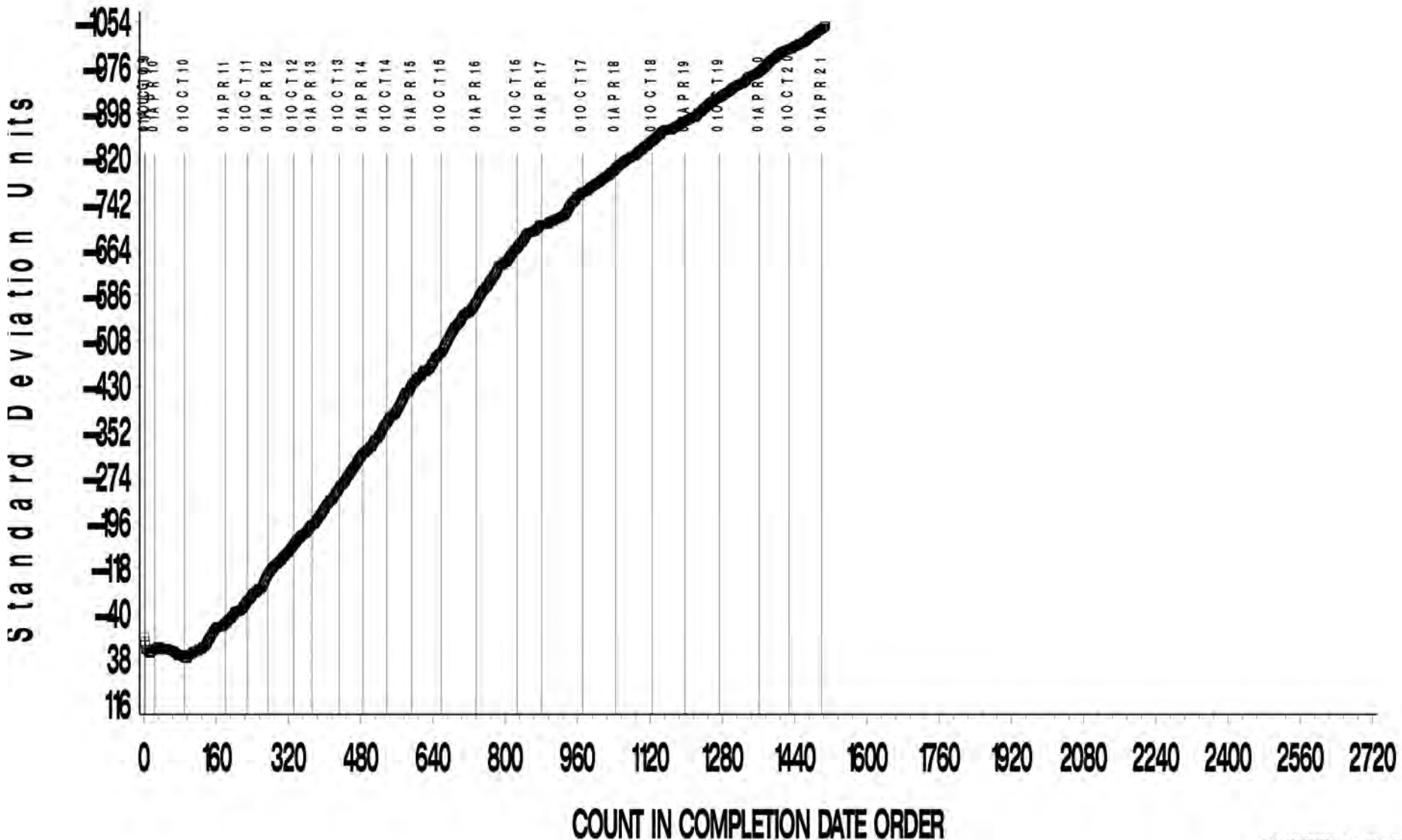
REF POLYACRYLATE POINTS HARDNESS CHG FINAL

CUSUM Severity Analysis



REF POLYACRYLATE TENSILE STRENGTH CHG FINAL

CUSUM Severity Analysis



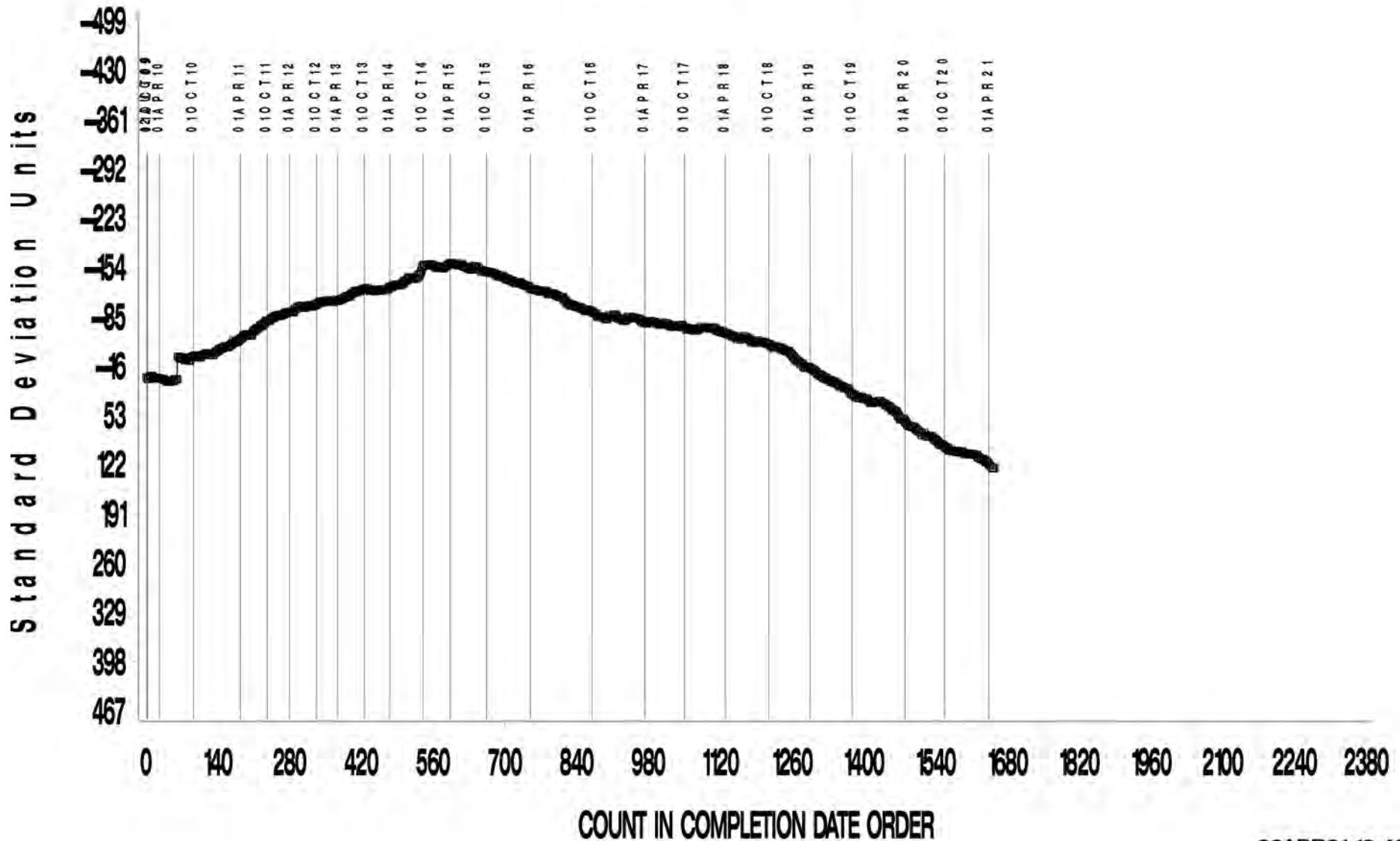
LDEOC Test Severity

▶ Silicone (VMQ1)

Parameter	Period Mean Δ/s	Status
Volume Change	0.28	Severe
Points Hardness Change	-0.73	Mild
Tensile Strength Change	0.48	Severe

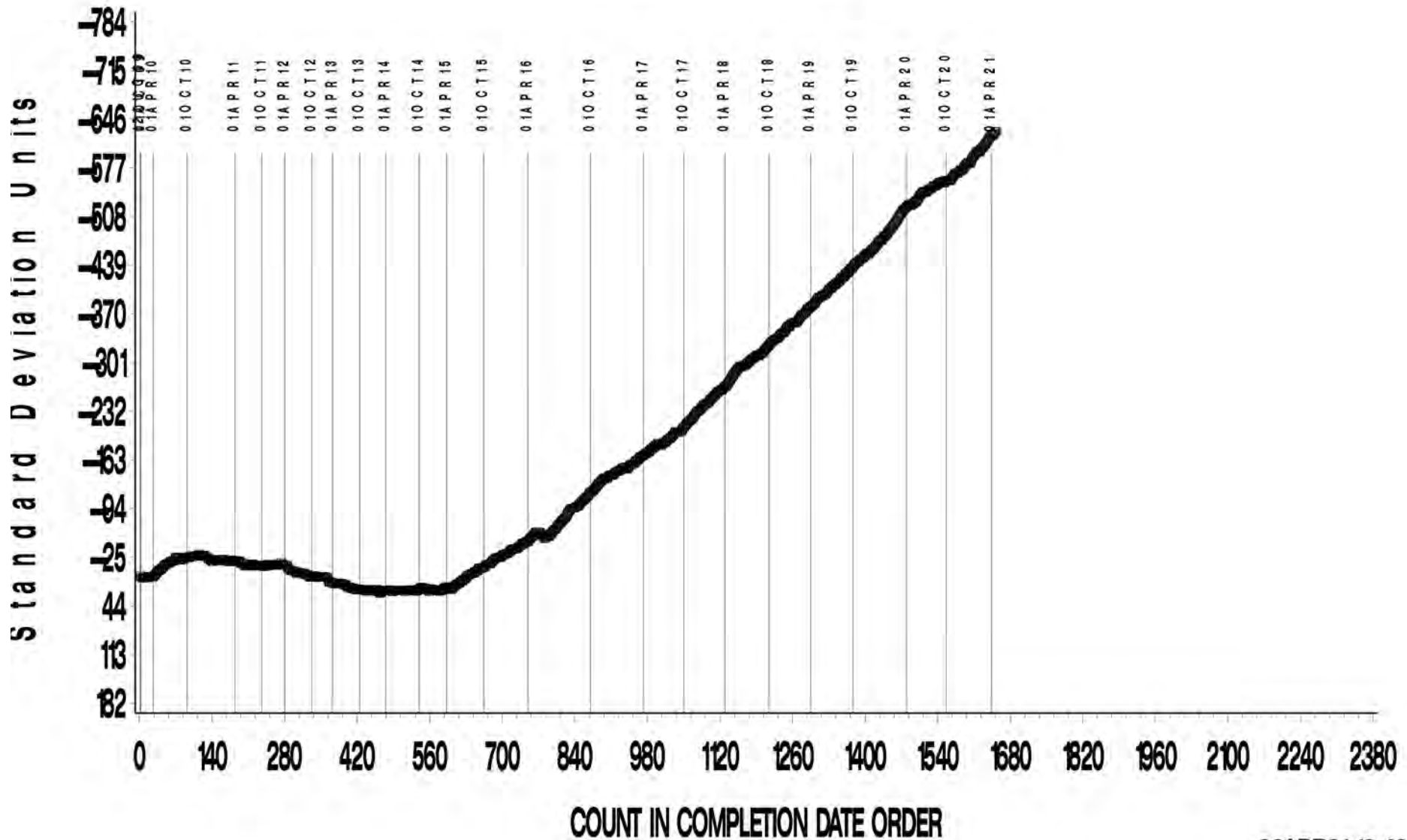
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CUSUM Severity Analysis



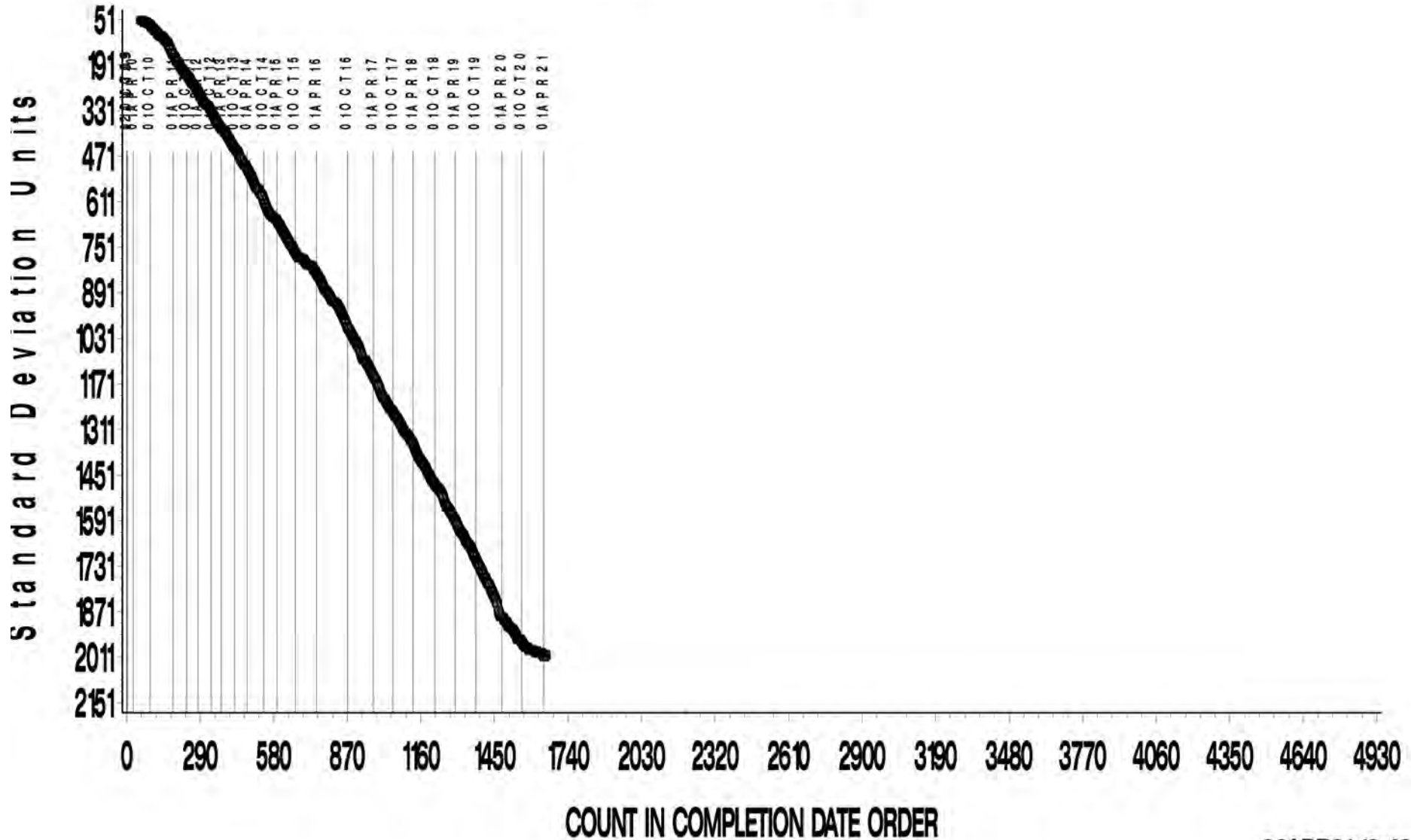
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CUSUM Severity Analysis

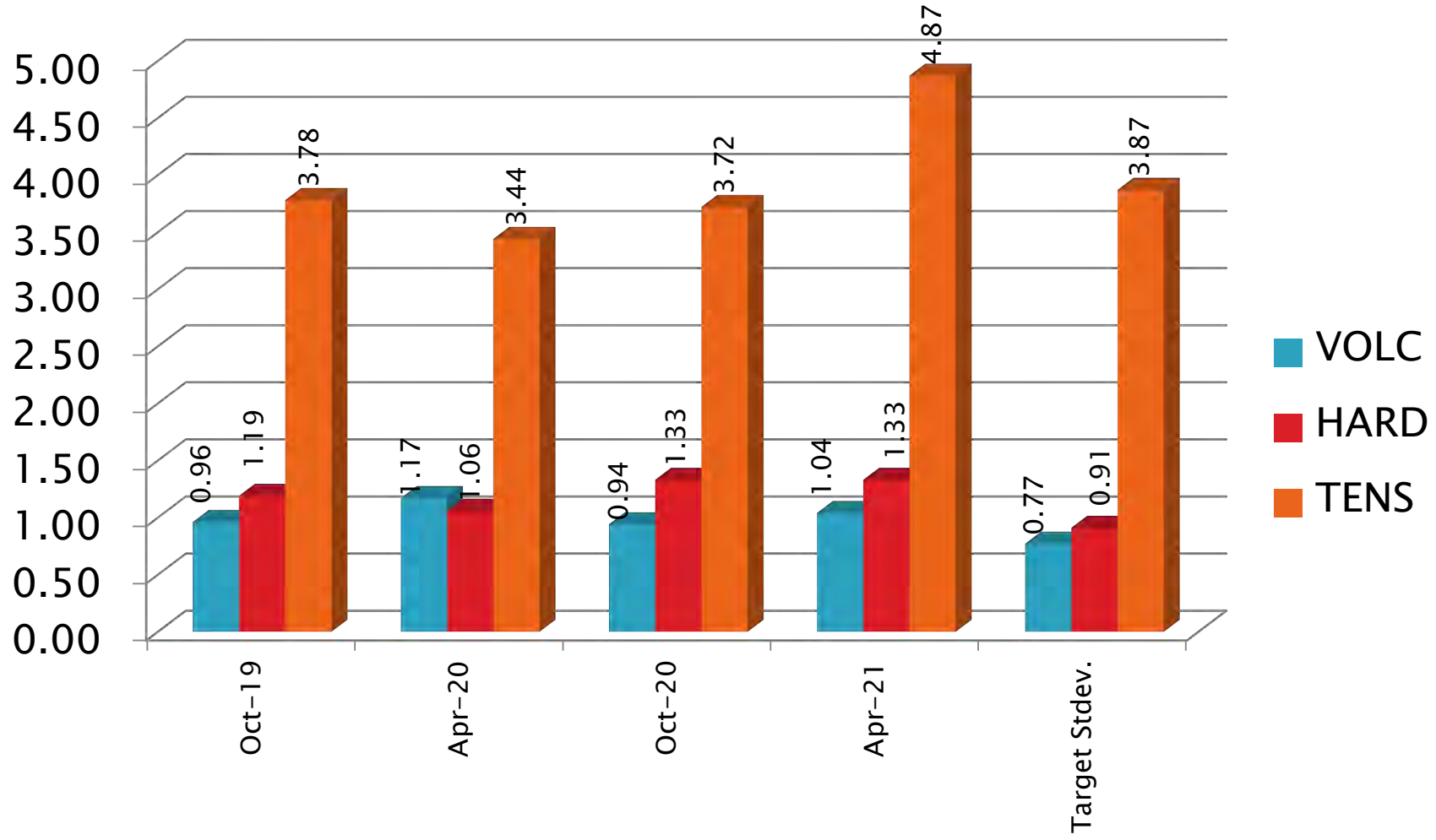


REF SILICON TENSILE STRENGTH CHANGE FINAL

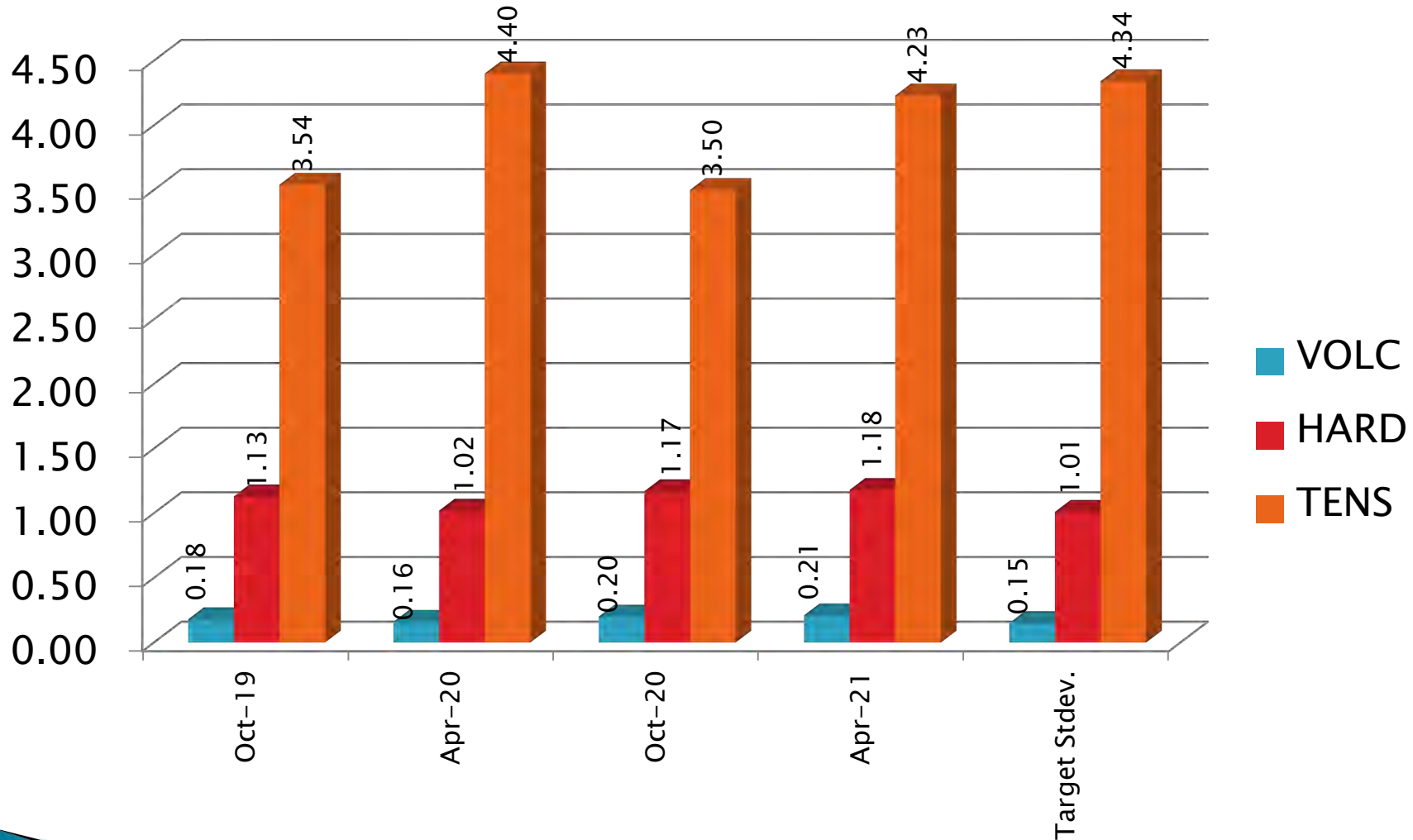
CUSUM Severity Analysis



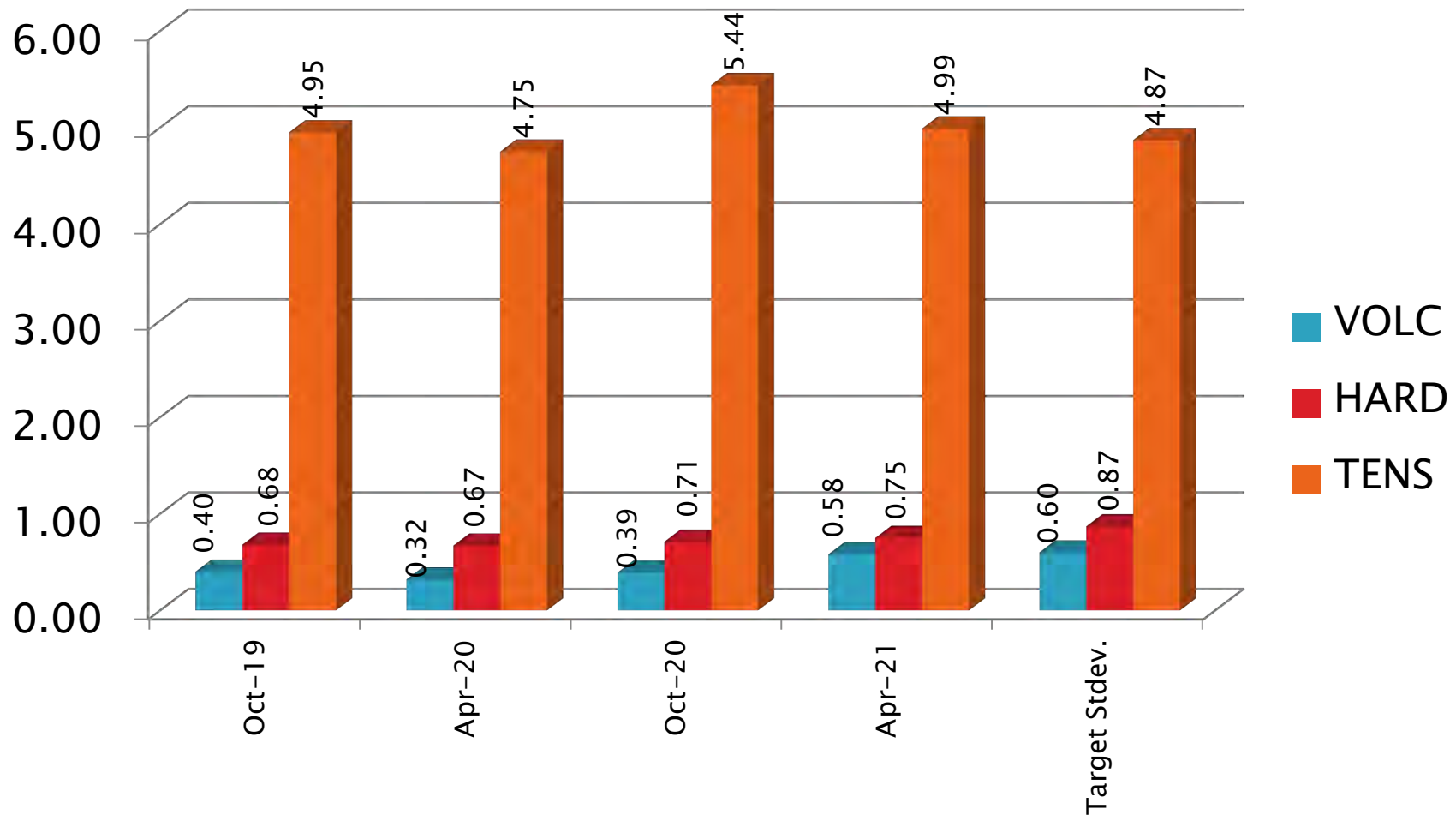
LDEOC Precision Estimates - Ethylene Acrylate



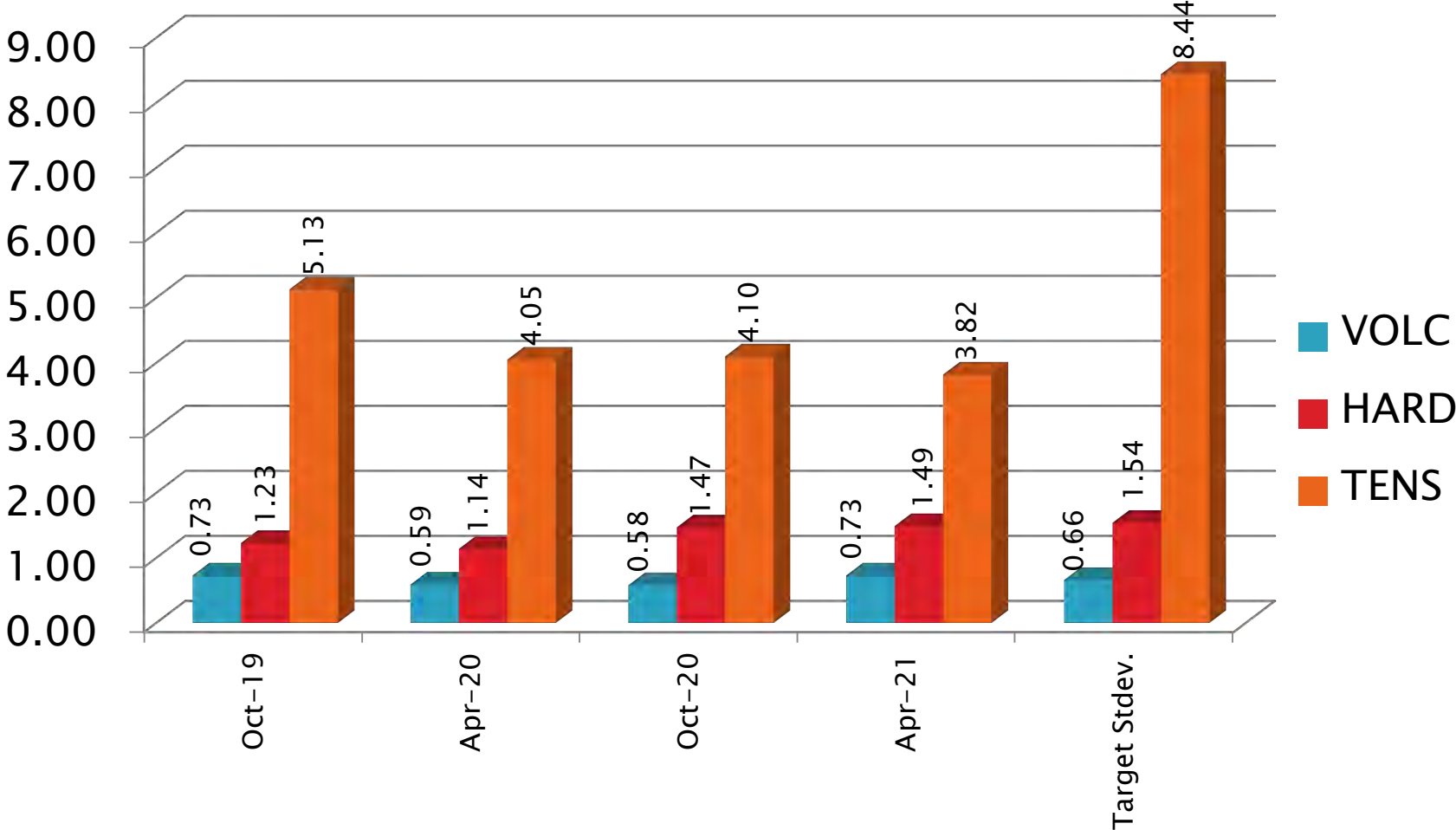
LDEOC Precision Estimates - Fluoroelastomer



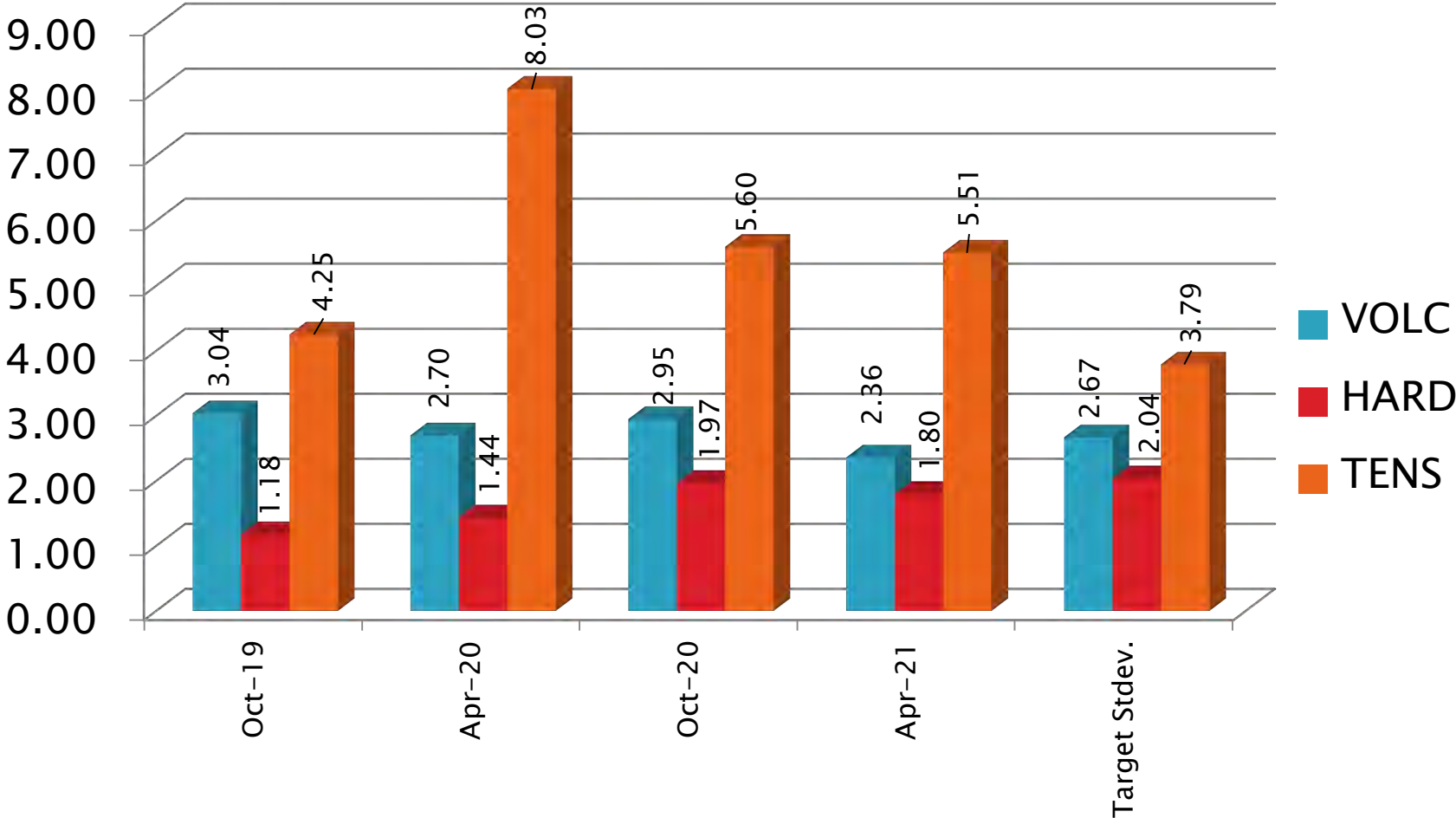
LDEOC Precision Estimates - Nitrile



LDEOC Precision Estimates – Polyacrylate



LDEOC Precision Estimates - Silicone



Information Letters & Technical Updates*

Test	Date	IL or Memo Number	Topic
LDEOC		None	Nothing issued this report period

*Available from TMC Website

Reference Oil Inventory Estimated Life

Oil	TMC Inventory Gallons	Gallons Shipped Past 12 Months	Estimated Life
SL107 ^{A, B}	3155	386	5+ years

^ATMC Inventory is used across several test methods

^BSL107 replaces oil 1006; still assigning existing lab inventories of 1006 batches where available.

Test Monitoring Center

<http://astmtmc.cmu.edu>



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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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