



A Program of ASTM International

Test Monitoring Center

<https://www.astmtmc.org>

ASTM Reference Testing Semi-Annual Report D7216 LDEOC Fall 2022

LDEOC Test Activity*

Test Status		Ethylene Acrylate	Fluoroelast.	Nitrile	Polyacrylate	Silicone	Total
Acceptable Calibration Test	AC	71	63	77	69	88	368
Failed Calibration Test	OC	2	1	2	1	1	7
Operationally Invalid, by lab	LC	0	0	0	0	0	0
Operationally Invalid, by TMC	RC	0	0	0	0	0	0
Aborted	XC	3	2	2	1	2	10
Industry Information Runs	AG	0	0	0	0	0	0
Total		76	66	81	71	91	385

*April 1, 2022 -- September 30, 2022

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LDEOC Failing Calibration (OC) Tests*

Validity	Cause	#
OC	Hardness (Mild of Target)	5
OC	Volume Change (Mild of Target)	1
OC	Hardness and Tensile Strength (Severe of Target)	1
	Total	7

*Invalid and aborted calibration tests

LDEOC Lost Tests*

Validity	Cause	#
XC	Power Outage	9
XC	Broken Coupons	1
RC	Bath temperature off-spec	0
LC	Tensile testing failure	0
	Total	10

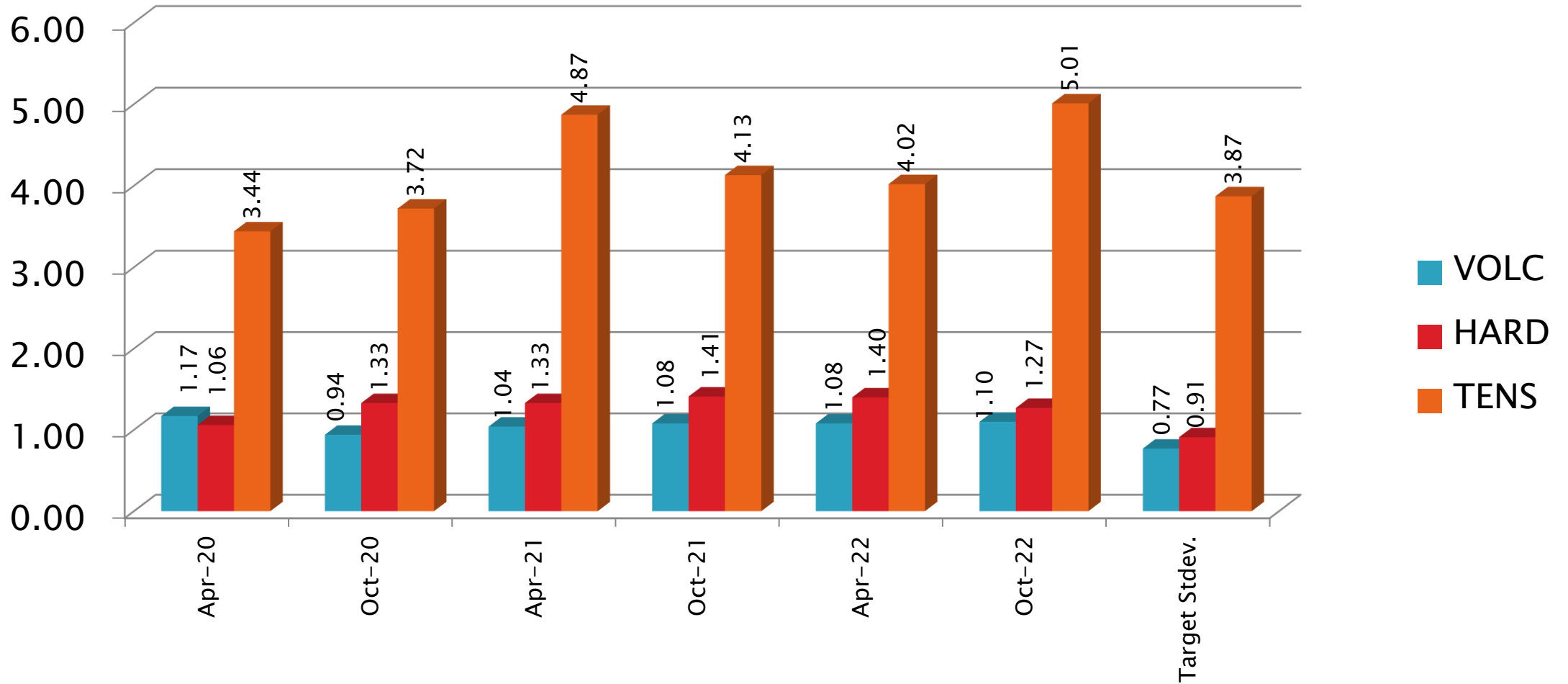
*Invalid and aborted calibration tests

LDEOC Test Severity

- ▶ Ethylene Acrylate (AEM1)

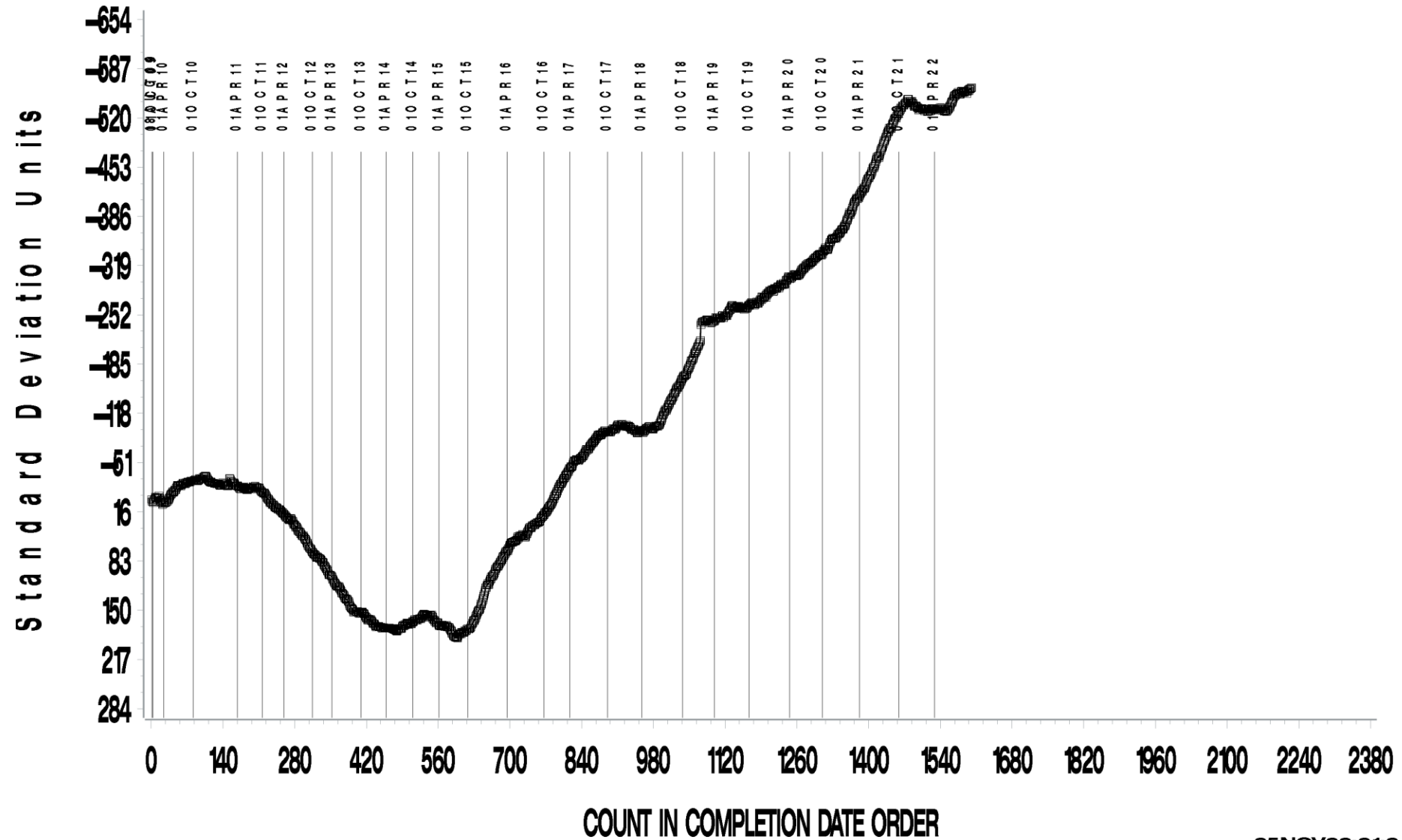
Parameter	Period Mean Δ/s	Status
Volume Change	-0.41	Mild
Points Hardness Change	-0.01	On-target
Tensile Strength Change	0.03	On-target

LDEOC Precision Estimates - Ethylene Acrylate



REF ETH ACRYLATE VOLUME CHANGE FINAL

CUSUM Severity Analysis



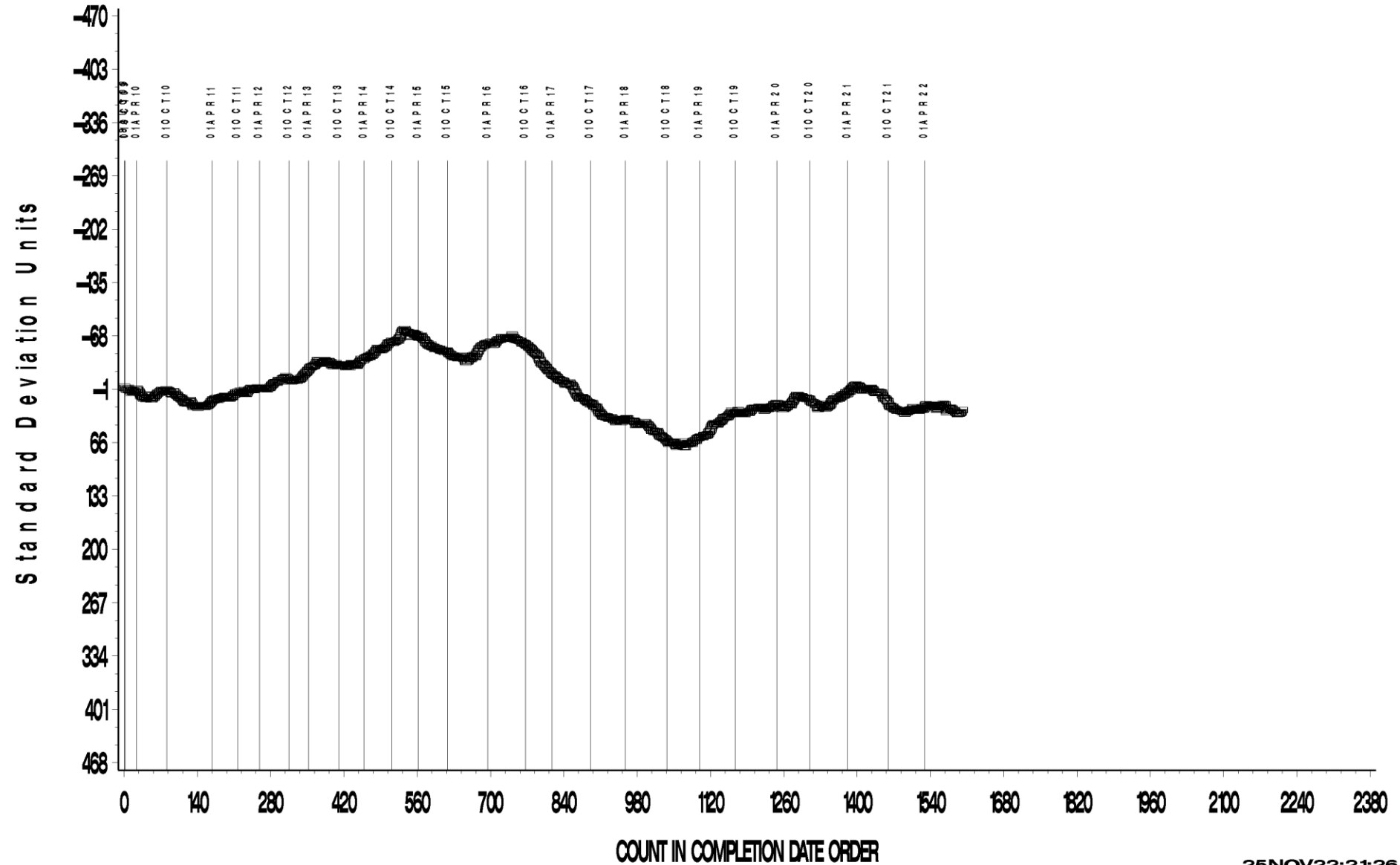
REF ETH ACRYLATE POINTS HARDNESS CHANGE FINAL

CUSUM Severity Analysis



REF ETH ACRYLATE TENSILE STRENGTH CHANGE FINAL

CUSUM Severity Analysis



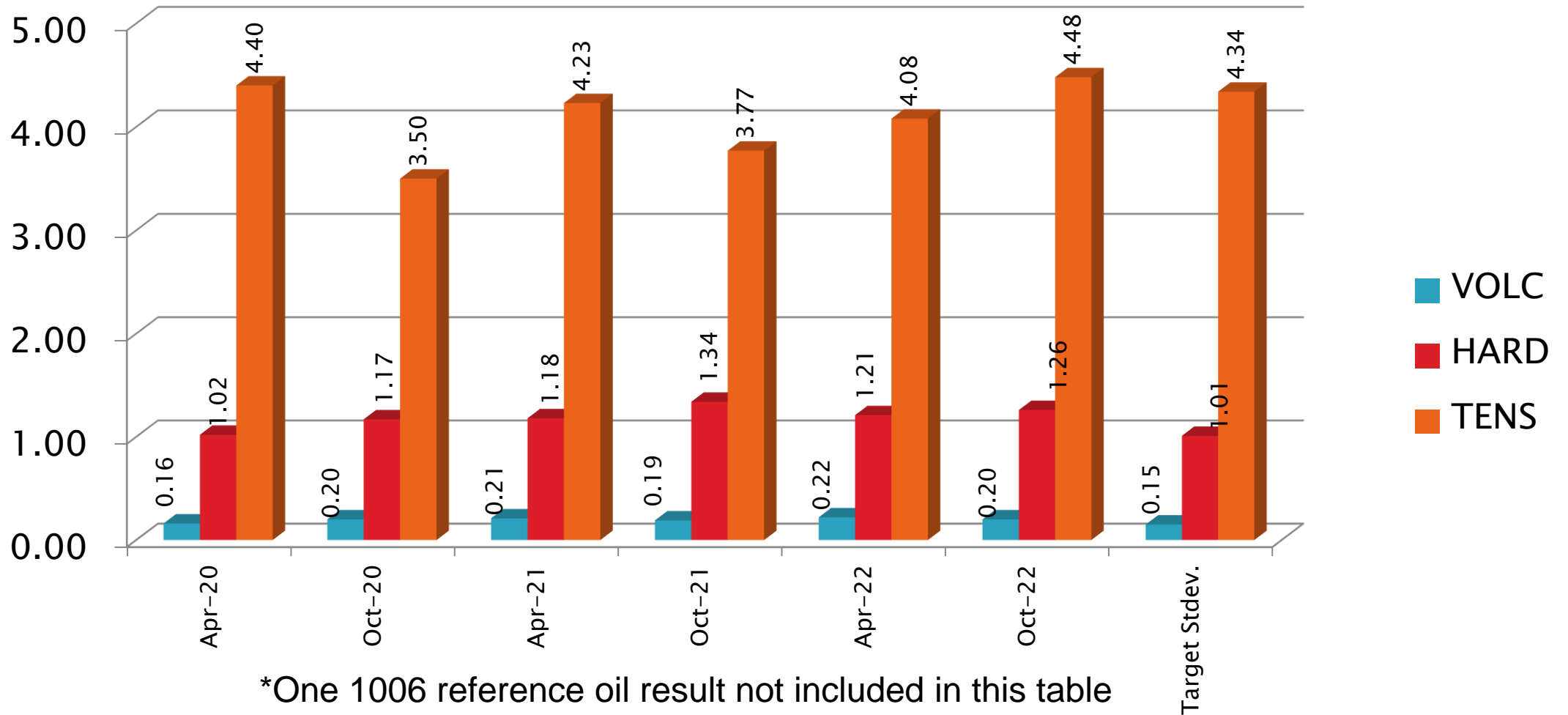
LDEOC Test Severity

▶ Fluoroelastomer (FKM1)

Parameter	Period Mean Δ/s *	Status
Volume Change	-0.54	Mild
Points Hardness Change	-0.05	On-target
Tensile Strength Change	0.20	Severe

*One 1006 reference oil result not included in this table

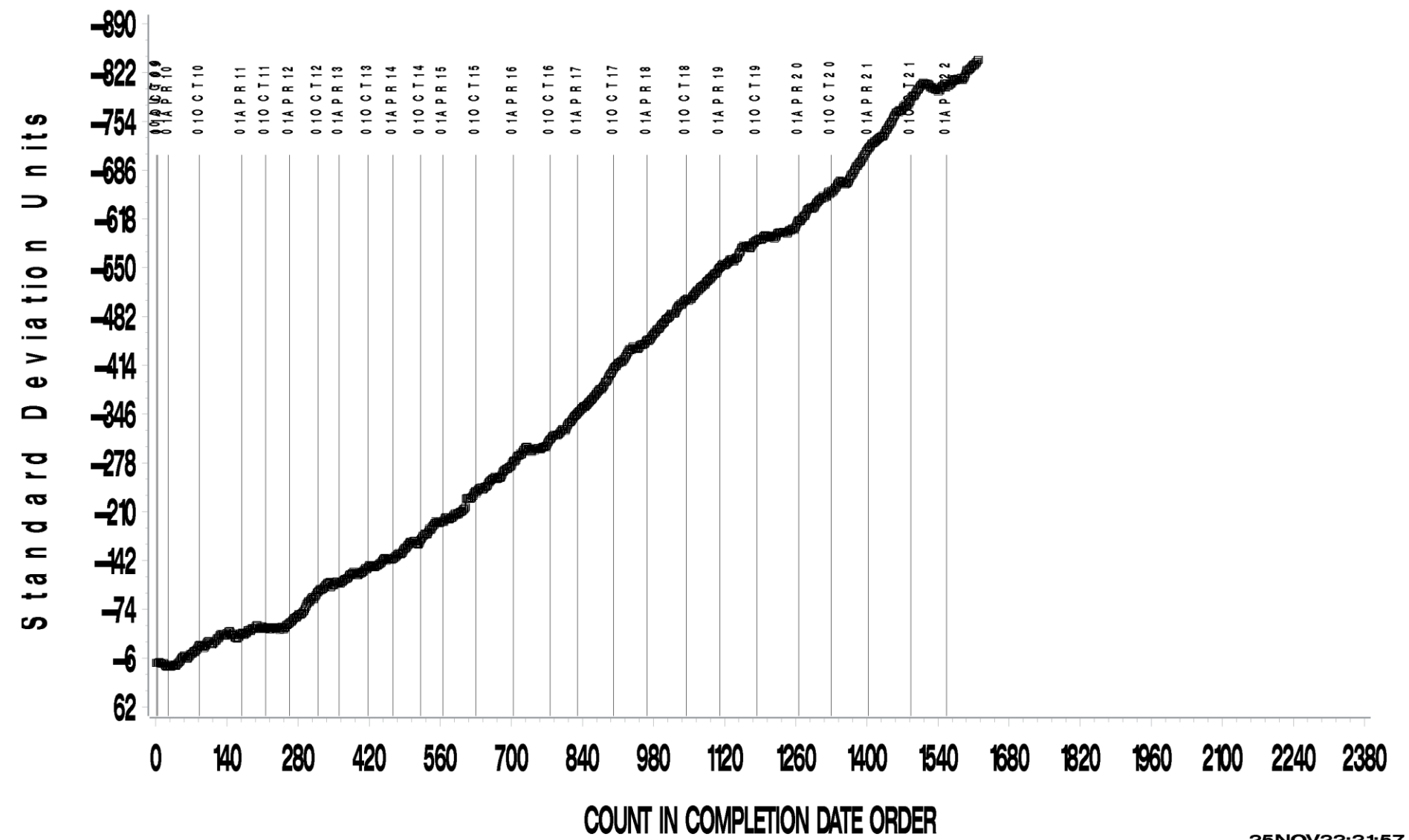
LDEOC Precision Estimates – Fluoroelastomer



*One 1006 reference oil result not included in this table

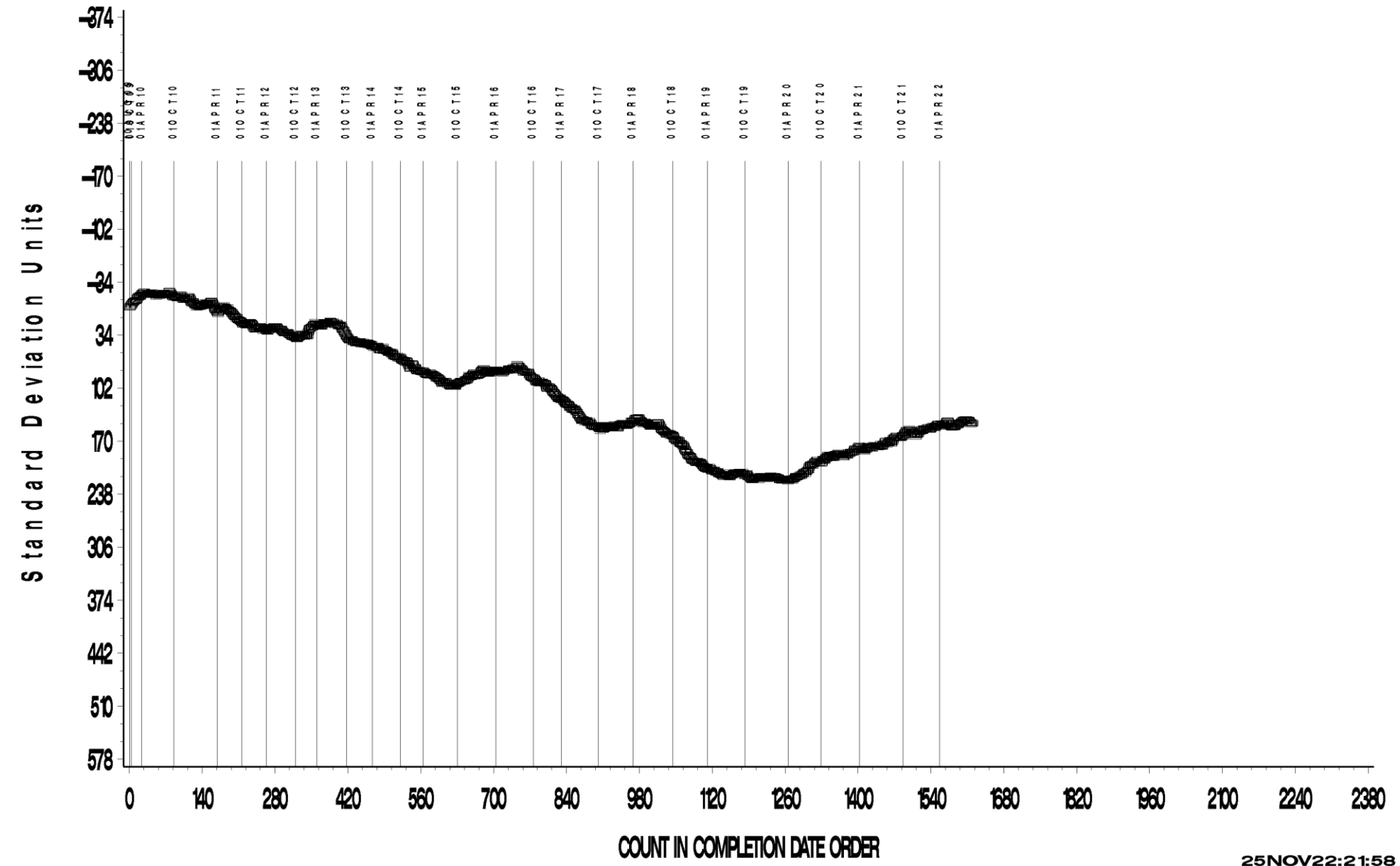
REF FLUOROELASTOMER VOLUME CHANGE FINAL

CUSUM Severity Analysis



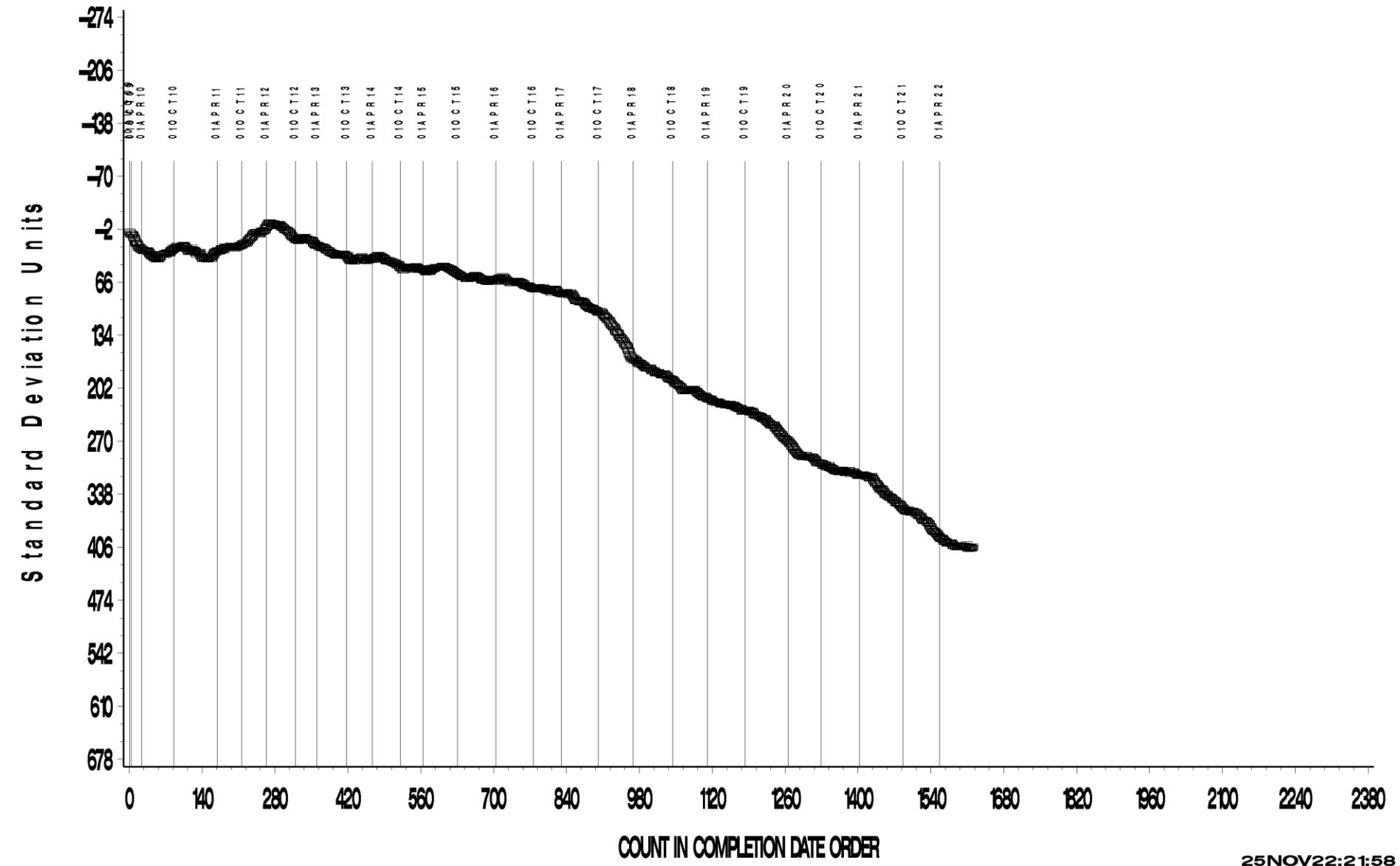
REF FLUORO POINTS HARDNESS CHANGE FINAL

CUSUM Severity Analysis



REF FLUORO TENSILE STRENGTH CHANGE AVERAGE

CUSUM Severity Analysis



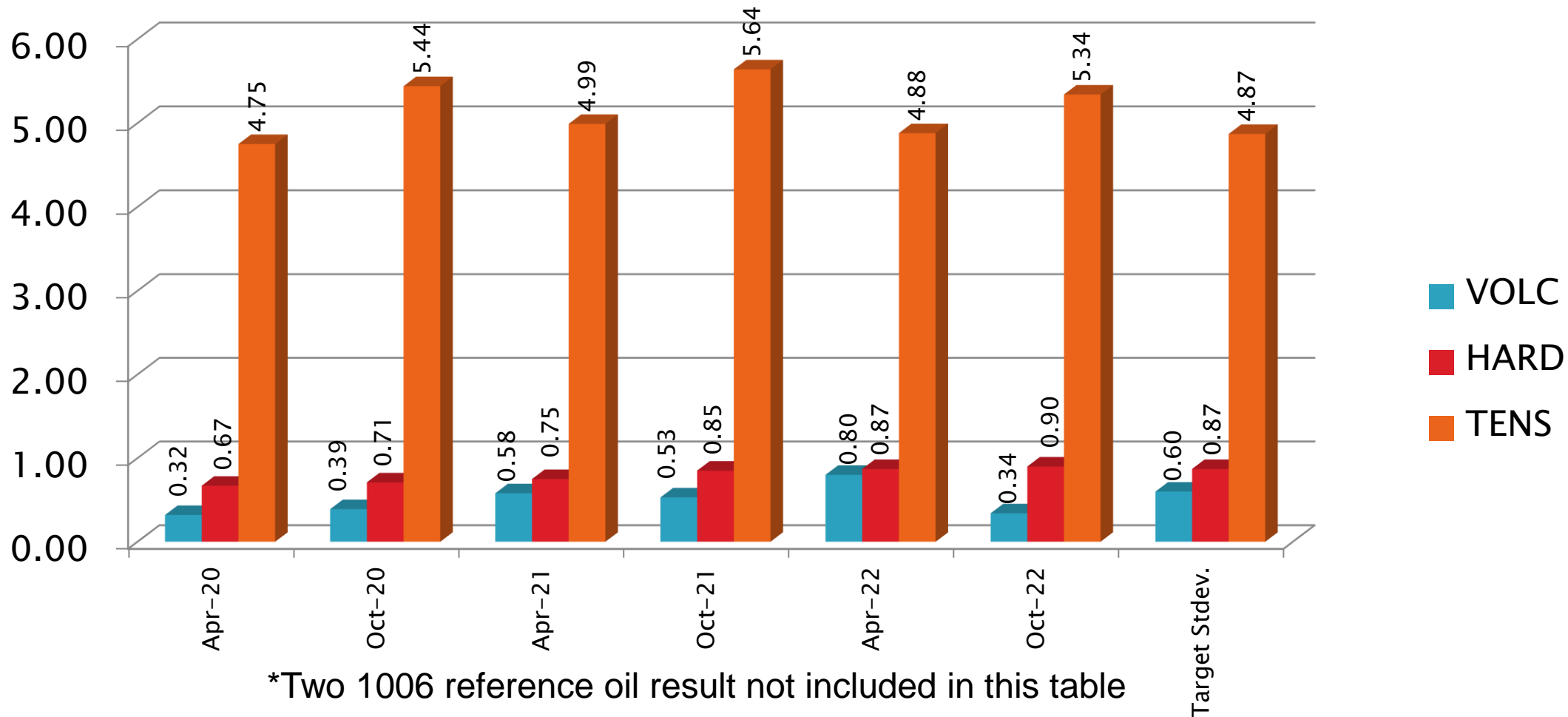
LDEOC Test Severity

▶ Nitrile (NBR1)

Parameter	Period Mean Δ/s	Status
Volume Change	1.60	Severe
Points Hardness Change	-0.66	Mild
Tensile Strength Change	-0.59	Mild

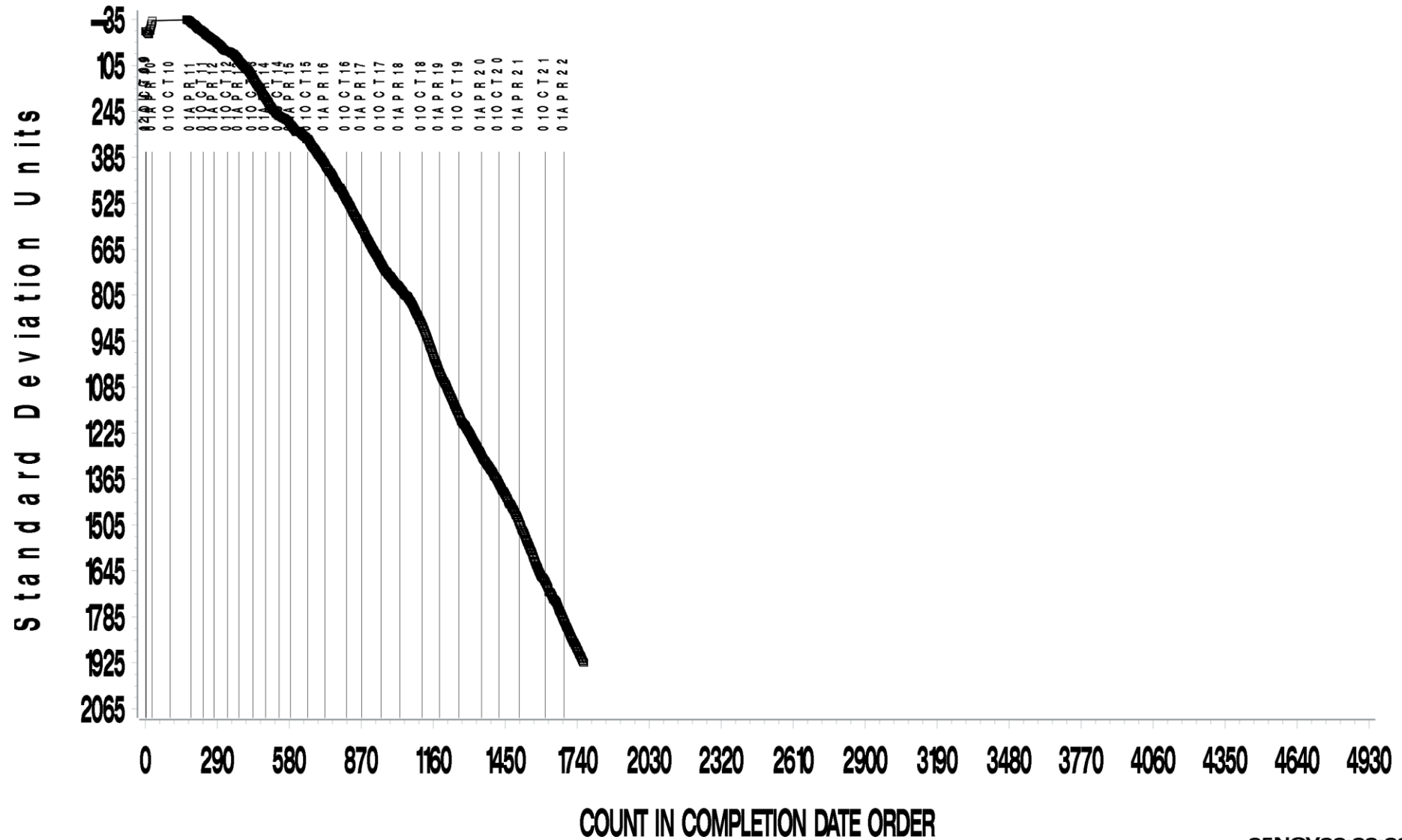
*Two 1006 reference oil result not included in this table

LDEOC Precision Estimates – Nitrile



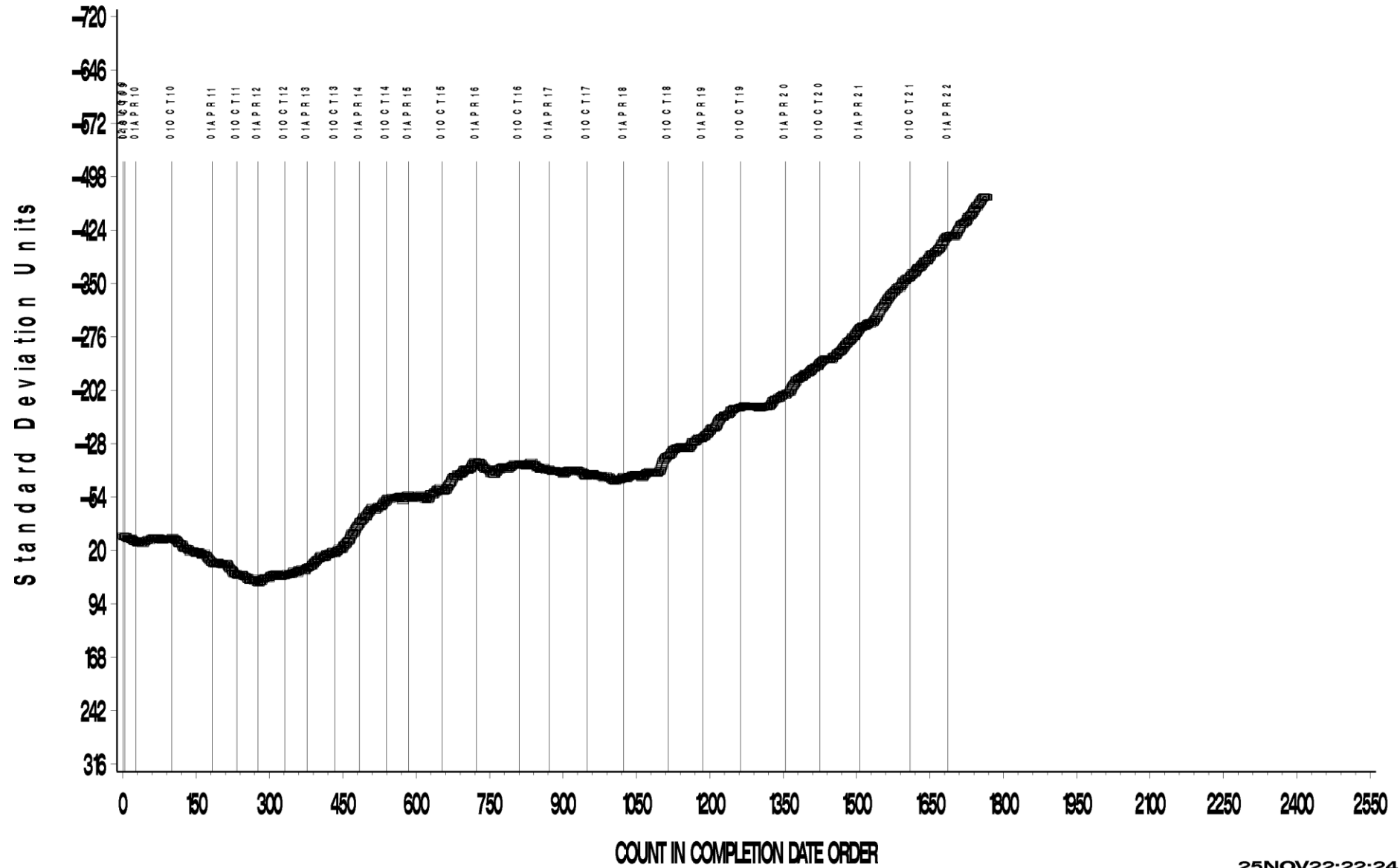
REFERENCE NITRILE VOLUME CHANGE FINAL

CUSUM Severity Analysis



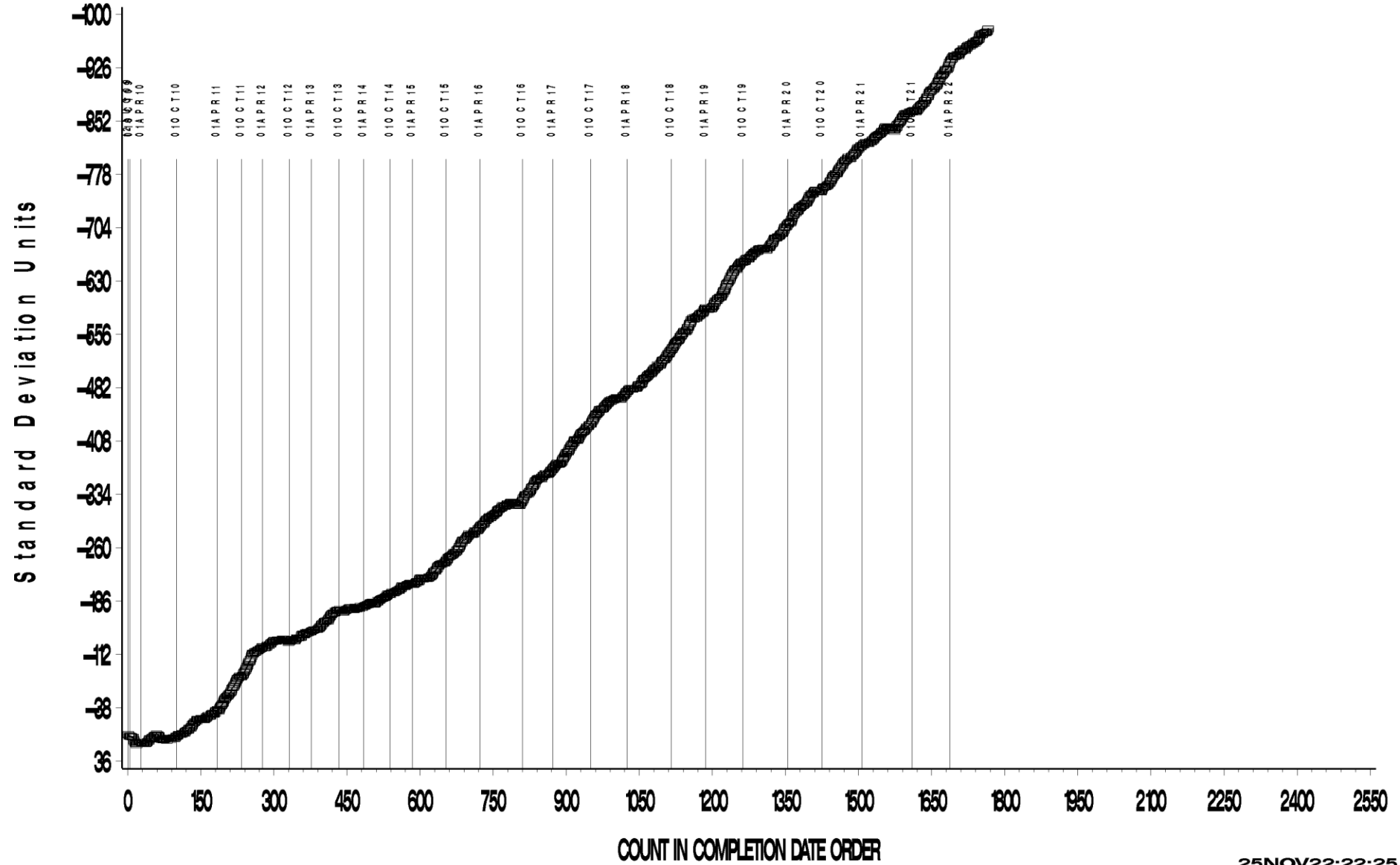
REF NITRILE POINTS HARDNESS CHANGE AVERAGE

CUSUM Severity Analysis



REF NITRILE TENSILE STRENGTH CHANGE FINAL

CUSUM Severity Analysis

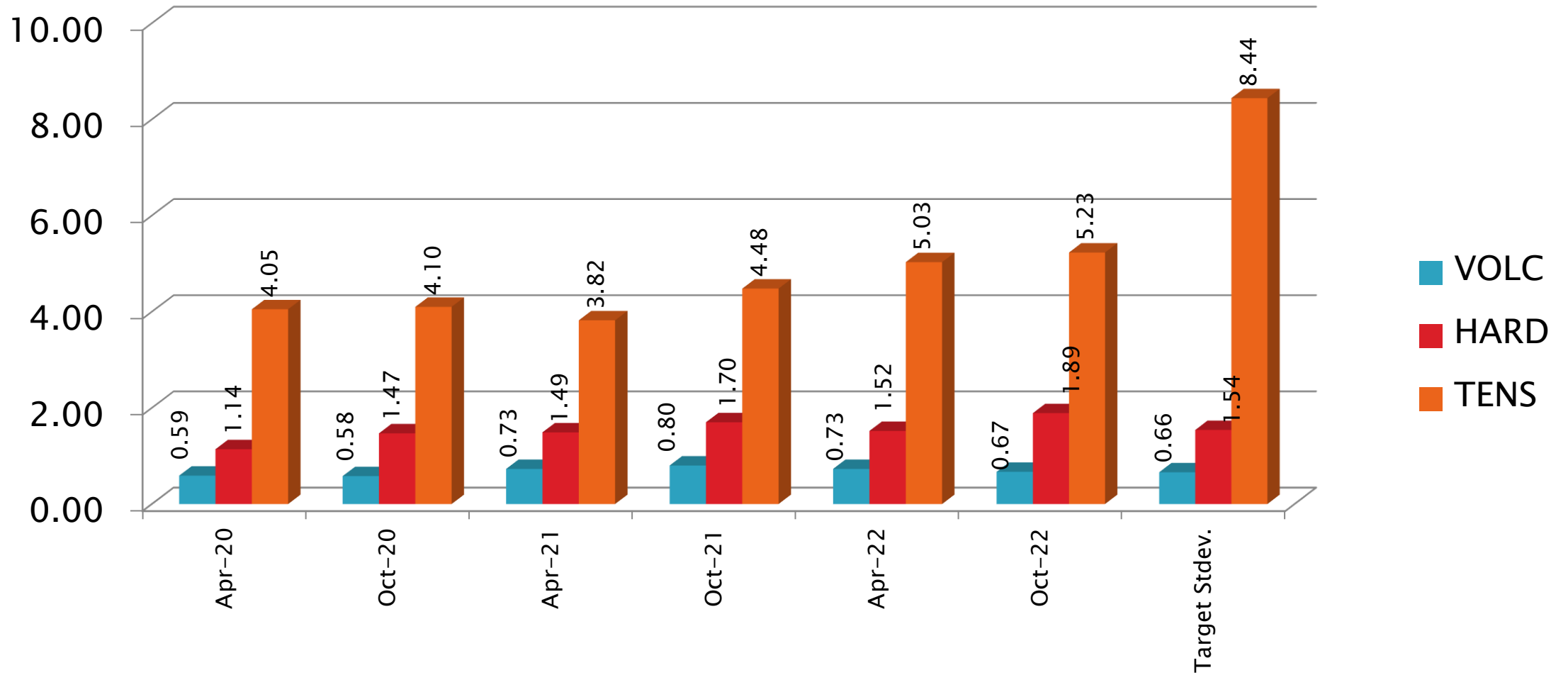


LDEOC Test Severity

- ▶ Polyacrylate (ACM1)

Parameter	Period Mean Δ/s	Status
Volume Change	0.33	Severe
Points Hardness Change	-1.08	Mild
Tensile Strength Change	-0.49	Mild

LDEOC Precision Estimates – Polyacrylate



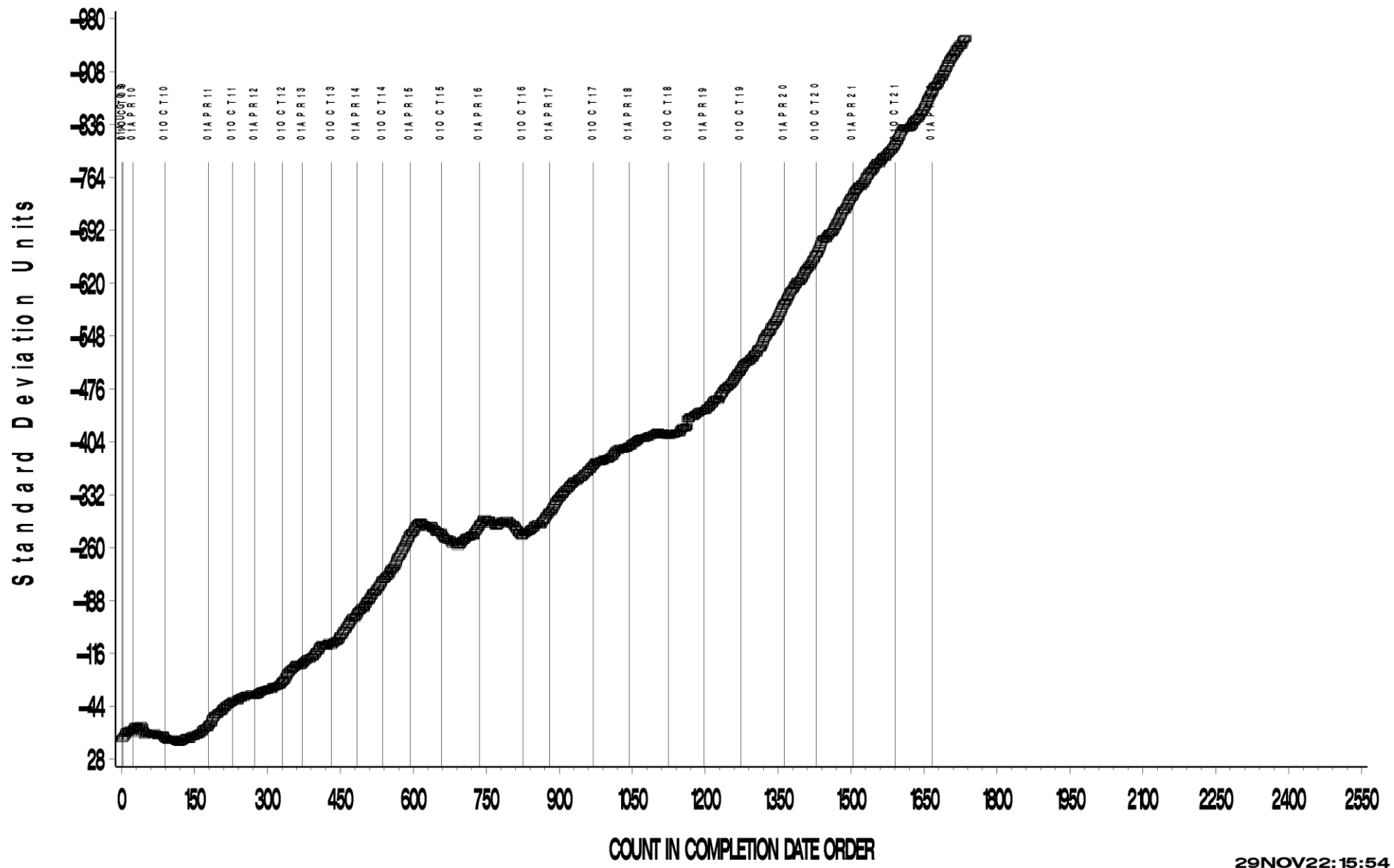
REF POLYACRYLATE VOLUME CHANGE FINAL

CUSUM Severity Analysis



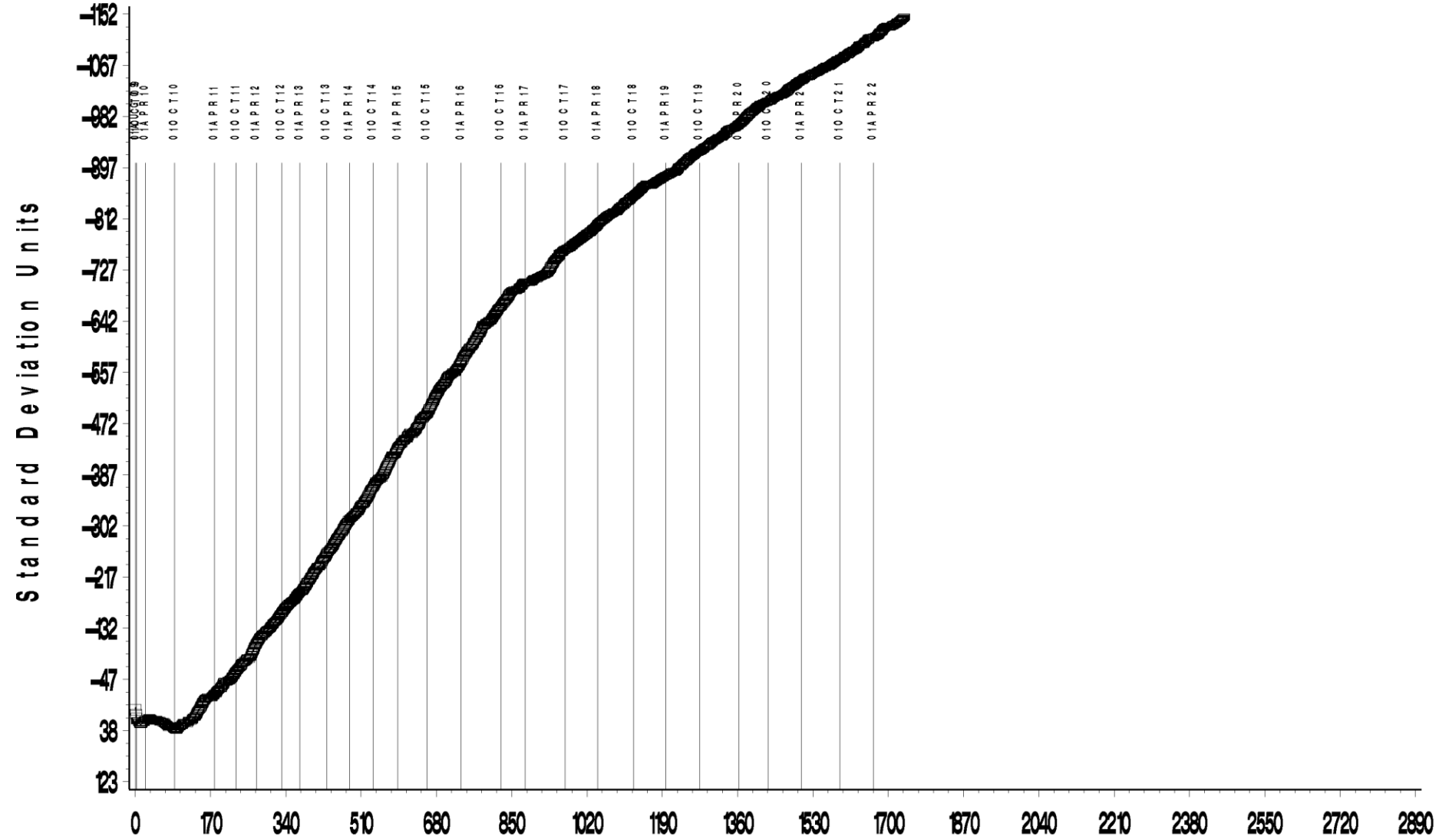
REF POLYACRYLATE POINTS HARDNESS CHG FINAL

CUSUM Severity Analysis



REF POLYACRYLATE TENSILE STRENGTH CHG FINAL

CUSUM Severity Analysis

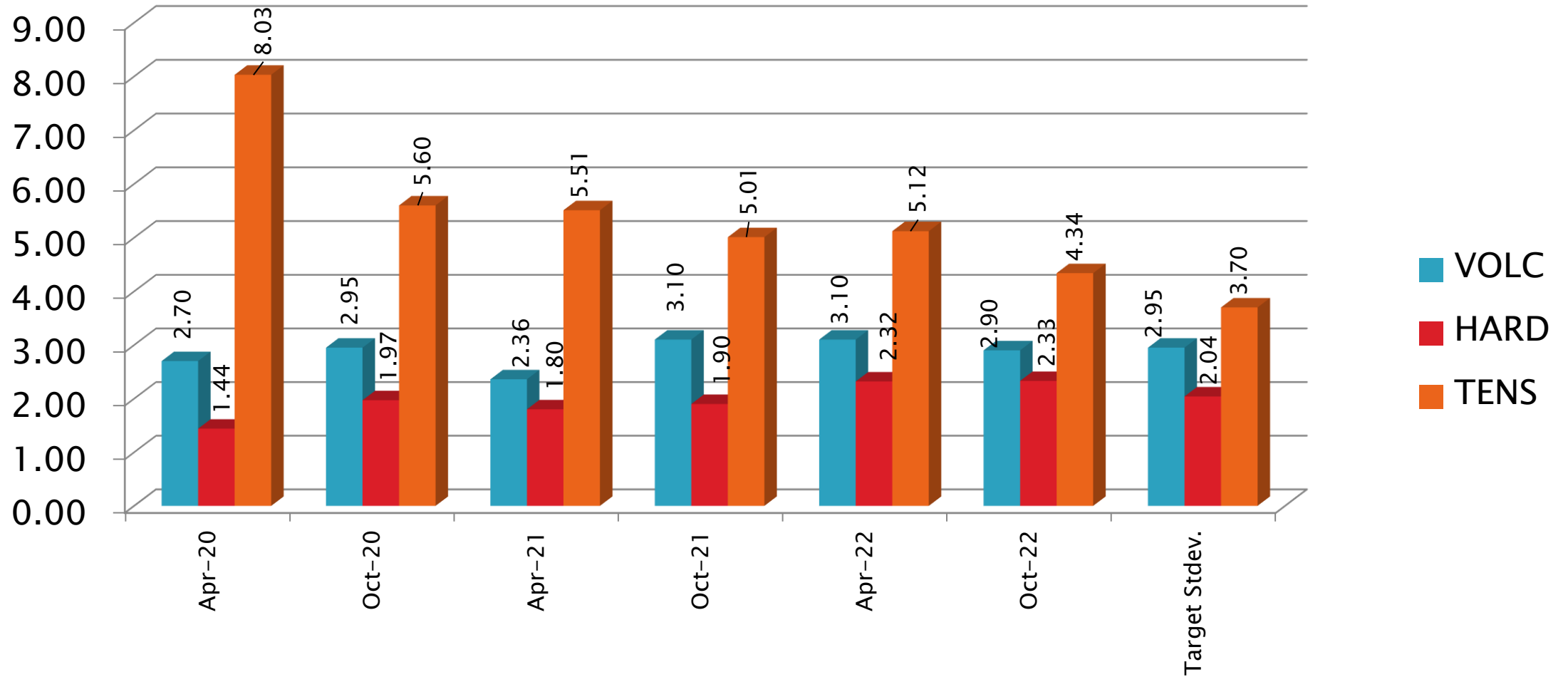


LDEOC Test Severity

- ▶ Silicone (VMQ1)

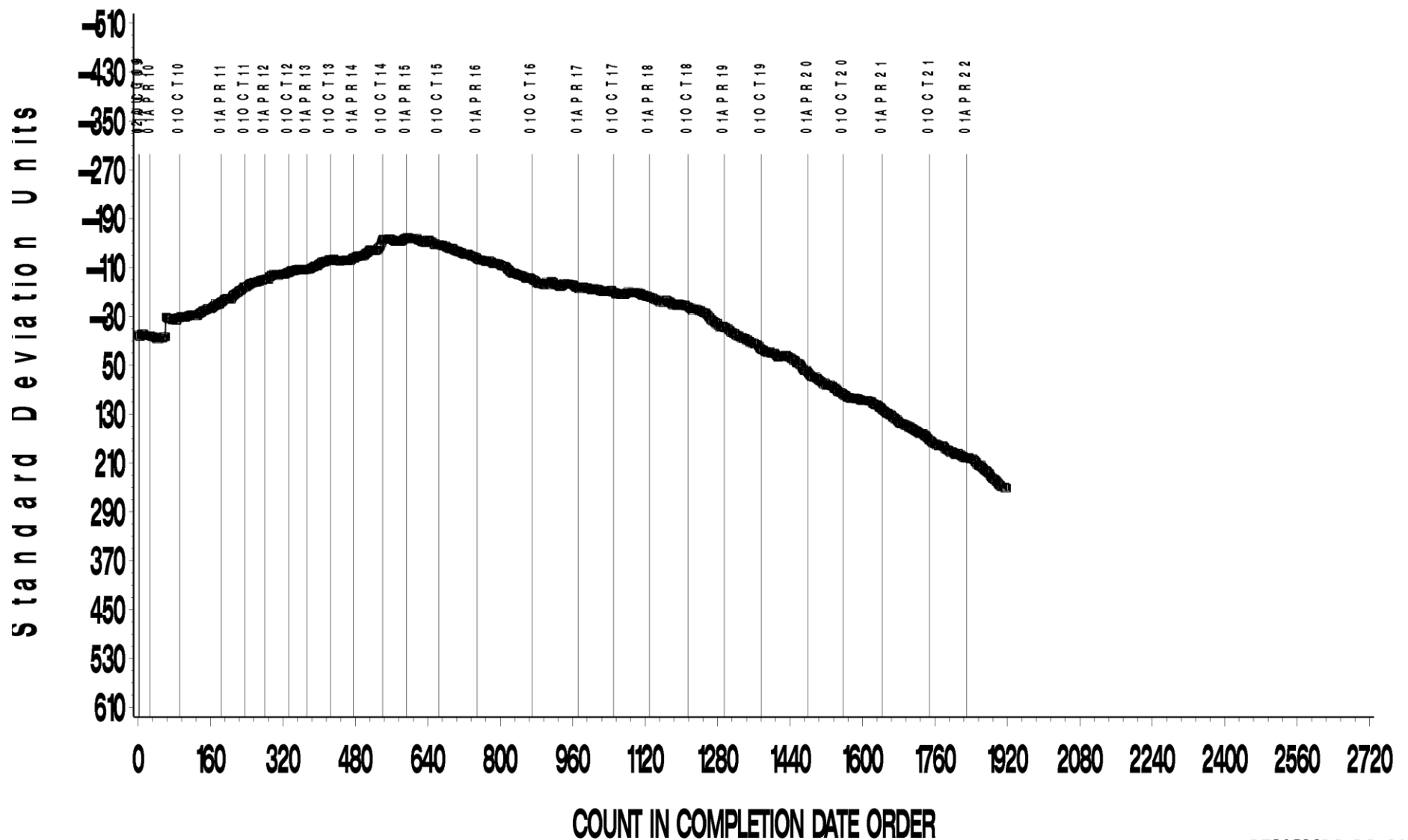
Parameter	Period Mean Δ/s	Status
Volume Change	0.55	Severe
Points Hardness Change	-1.27	Mild
Tensile Strength Change	0.78	Severe

LDEOC Precision Estimates - Silicone



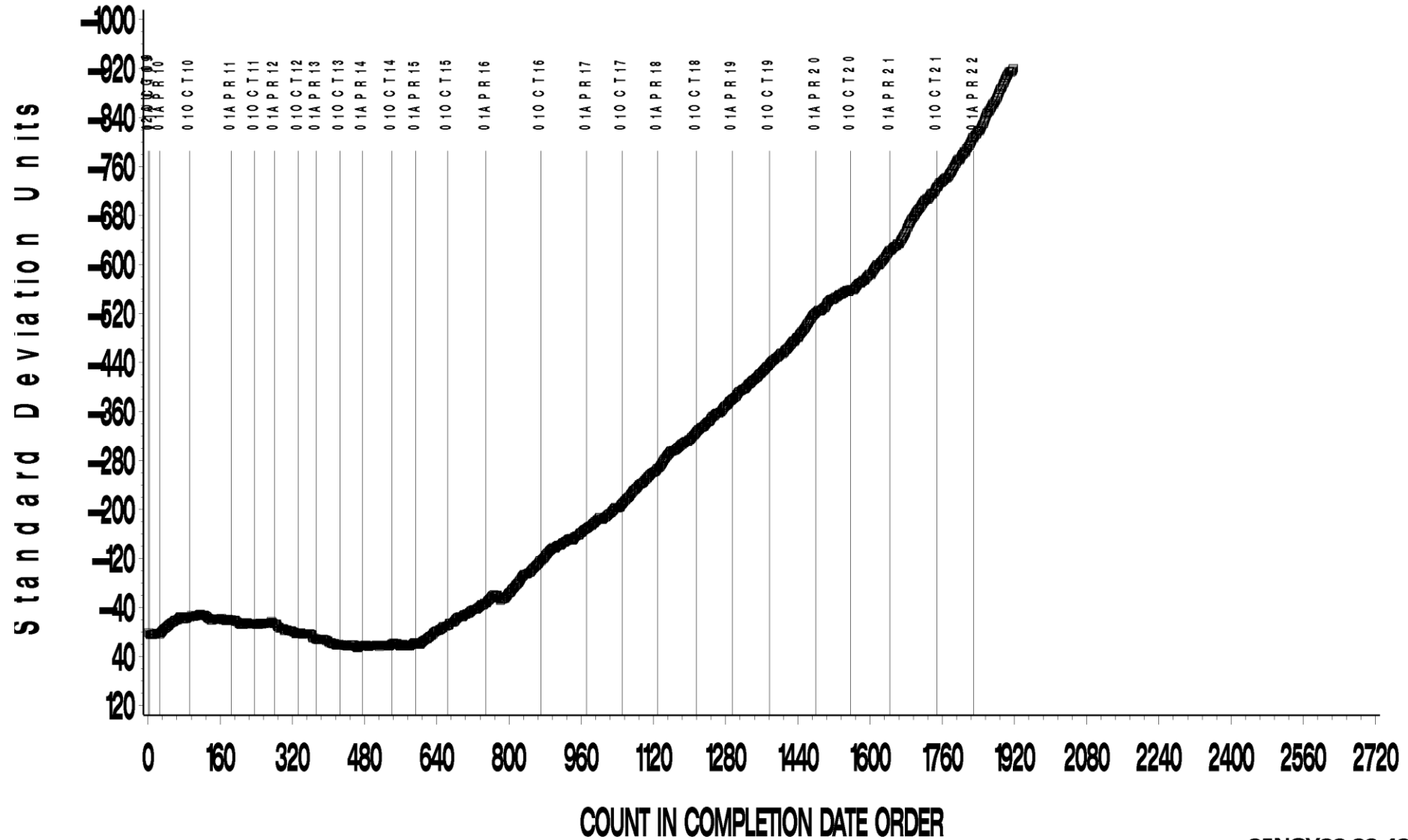
REFERENCE SILICON VOLUME CHANGE FINAL

CUSUM Severity Analysis



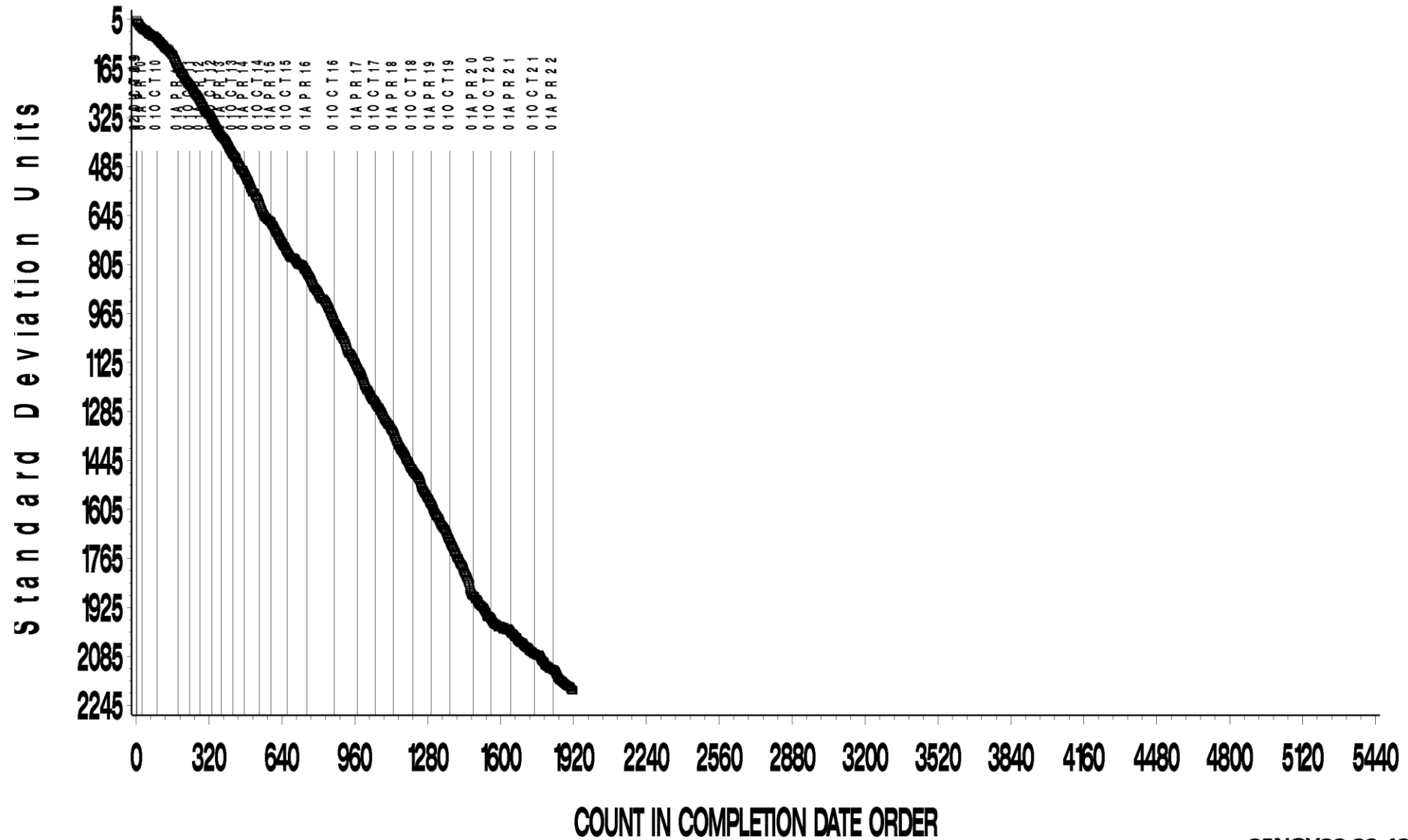
REFERENCE SILICON POINTS HARDNESS FINAL

CUSUM Severity Analysis



REF SILICON TENSILE STRENGTH CHANGE FINAL

CUSUM Severity Analysis



Information Letters & Technical Updates*

Test	Date	IL or Memo Number	Topic
-	-	-	-

There have been no Information Letters or Technical Updates for LDEOC in 2022

*Available from TMC Website

**Issued after report period end

Reference Oil Inventory Estimated Life

Oil	TMC Inventory Gallons	Gallons Shipped Past 12 Months	Estimated Life
SL107 ^{A, B}	2372	189	3.7 years

^ATMC Inventory is used across several test methods

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

Miscellaneous Information

- ▶ Available on TMC Website:
 - Oil Assignment Request and Test File Upload
 - Live Reference Test Data Bases
 - Surveillance Panel Meeting Minutes
- ▶ <https://www.astmtmc.org>



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