



Test Monitoring Center

@ Carnegie Mellon University
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<http://astmtmc.cmu.edu>
412-365-1000

MEMORANDUM: 21-005
DATE: April 16, 2021
TO: Anthony Lange, Chairman, L-33-1 Surveillance Panel
FROM: Dylan Beck *Dylan Beck*
SUBJECT: L-33-1 Testing from October 1, 2020 through March 31, 2021

Attached is a summary of testing activity this period.

DJB/djb/mem21-005.djb.doc

cc: Frank Farber
Jeff Clark

L-33-1 Surveillance Panel

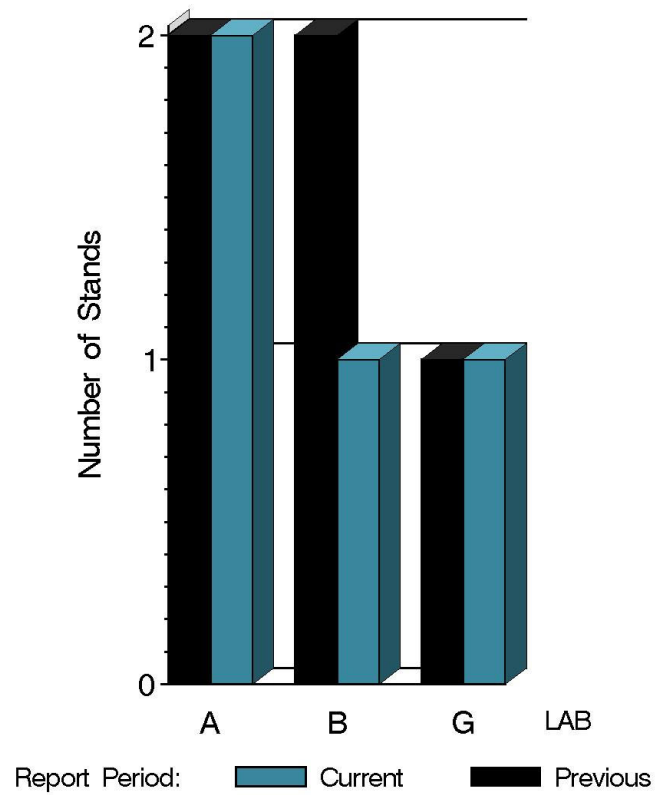
<http://www.astmtmc.cmu.edu/ftp/docs/gear/l331/semiannualreports/L331-04-2021.pdf>

Distribution: email

L-33-1 (D7038)

	Reporting Data	Calibrated on 3-31-21
Number of Labs	3	3
Number of Stands	4	4

BY-LAB STAND
DISTRIBUTION



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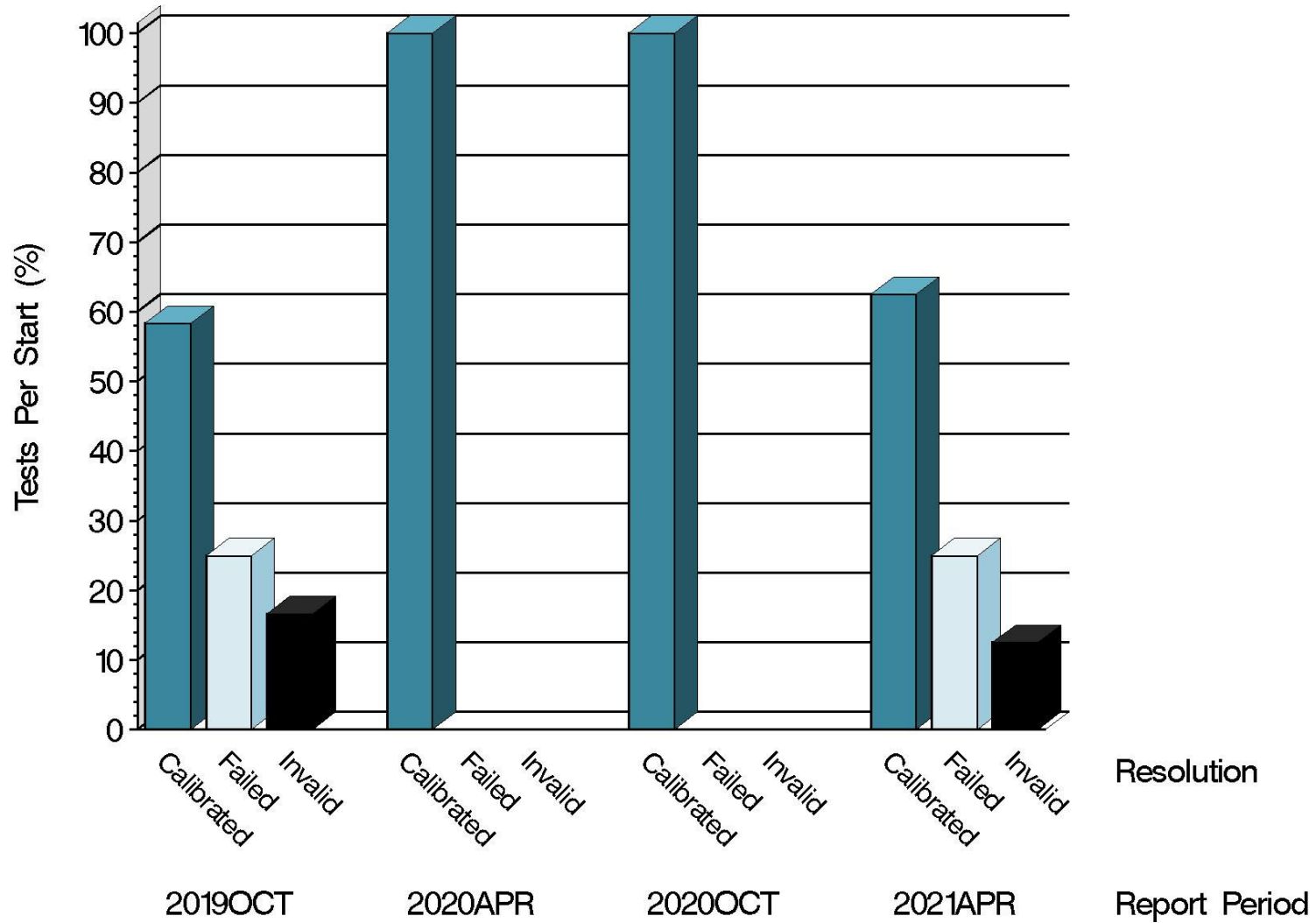
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Test Distribution by Oil and Validity

					Totals	
					Last Period	This Period
		123-2	155-1	155-2		
Accepted for calibration	AC	2	3	0	6	5
Rejected (Mild)	OC	1	0	0	0	1
Rejected (Severe)	OC	0	1	0	0	1
Rejected (Precision)	OC	0	0	0	0	0
Invalidated calibration	LC	1	0	0	0	1
Aborted	XC	0	0	0	0	0
Unacceptable info run	MI	0	0	0	0	0
Accepted information run	NI	1	0	3	5	4
Total		5	4	3	11	12

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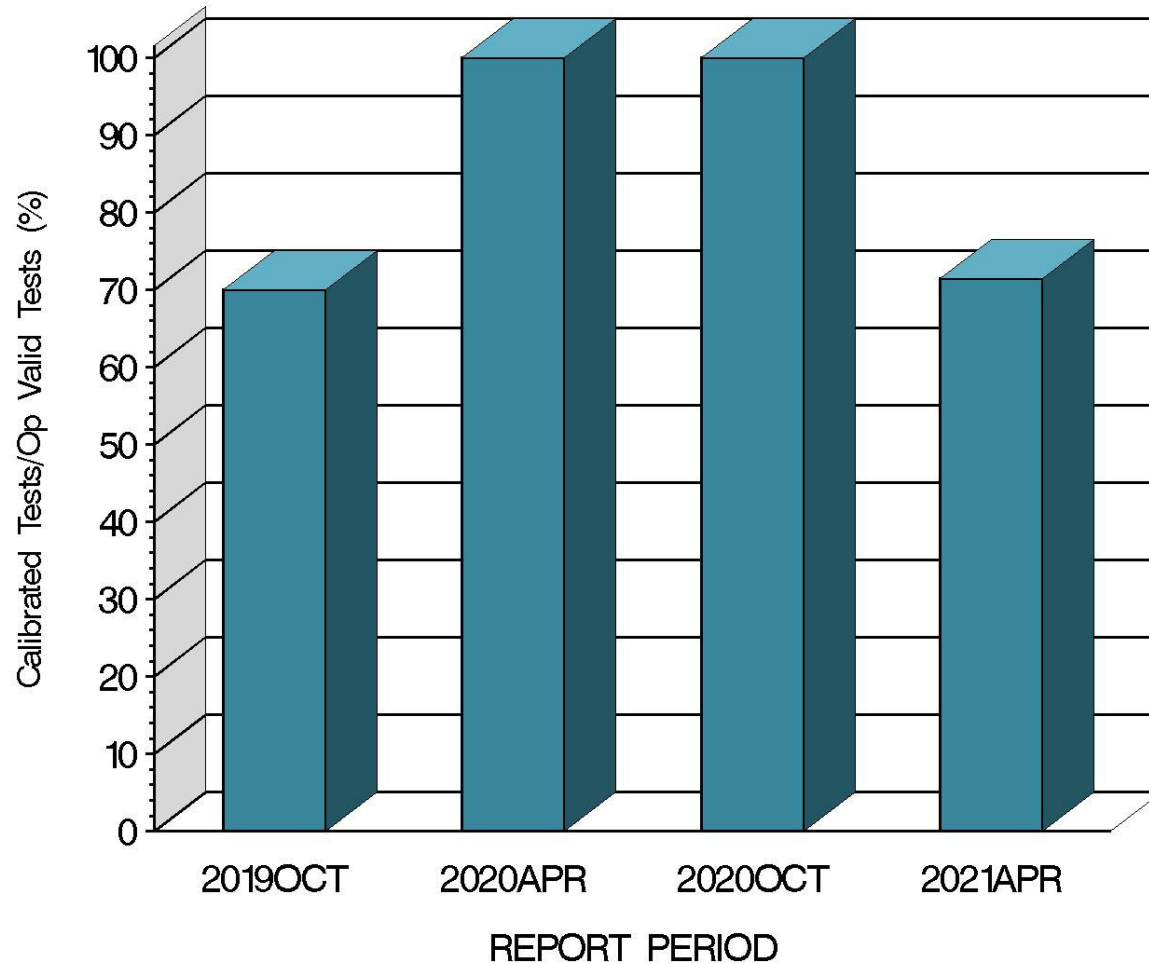
CALIBRATION ATTEMPT SUMMARY



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OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA



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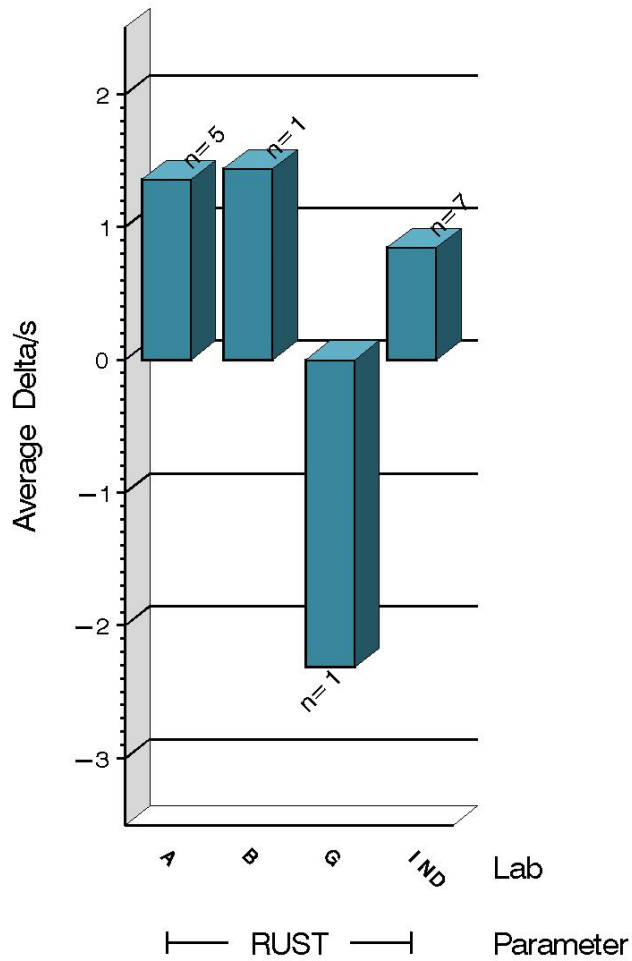
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CAUSES FOR LOST TESTS

Lab	Cause	Oil			Validity			Loss Rate		
		123-2	155-1	155-2	RC	LC	XC	Lost	Starts	%
A	Improper axle warm-up procedure	•				•		1	7	14%
	Lost	1	0	0	0	1	0			
	Starts	5	4	3	12	12	12			
	%	20%	0%	0%	0%	8%	0%			

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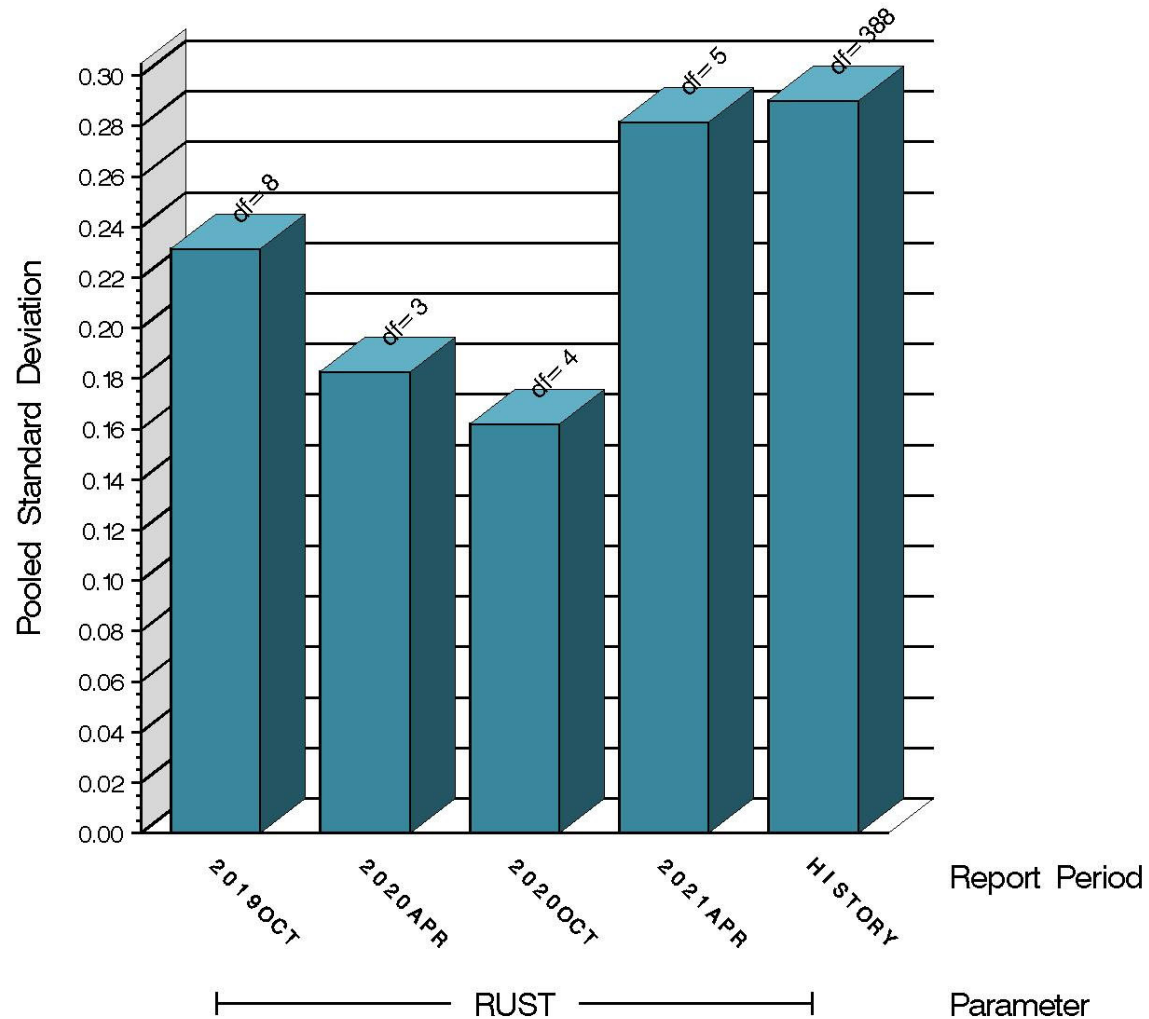
TEST SEVERITY
DELTA/S BY LAB



Average Δ/s by Lab			
Lab	N	RUST	Trend
A	5	1.358	Slightly mild
B	1	1.437	Slightly mild
G	1	-2.312	Severe
Industry	7	0.845	On-target
Shift	7	0.211 merits	

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TEST PRECISION
POOLED STANDARD DEVIATION
BY SIX-MONTH ASTM REPORT PERIOD



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SUMMARY OF SEVERITY & PRECISION

Severity

The severity EWMA exceeded the action limit in the mild direction this period, but has returned within limits with the most recent test.

Precision

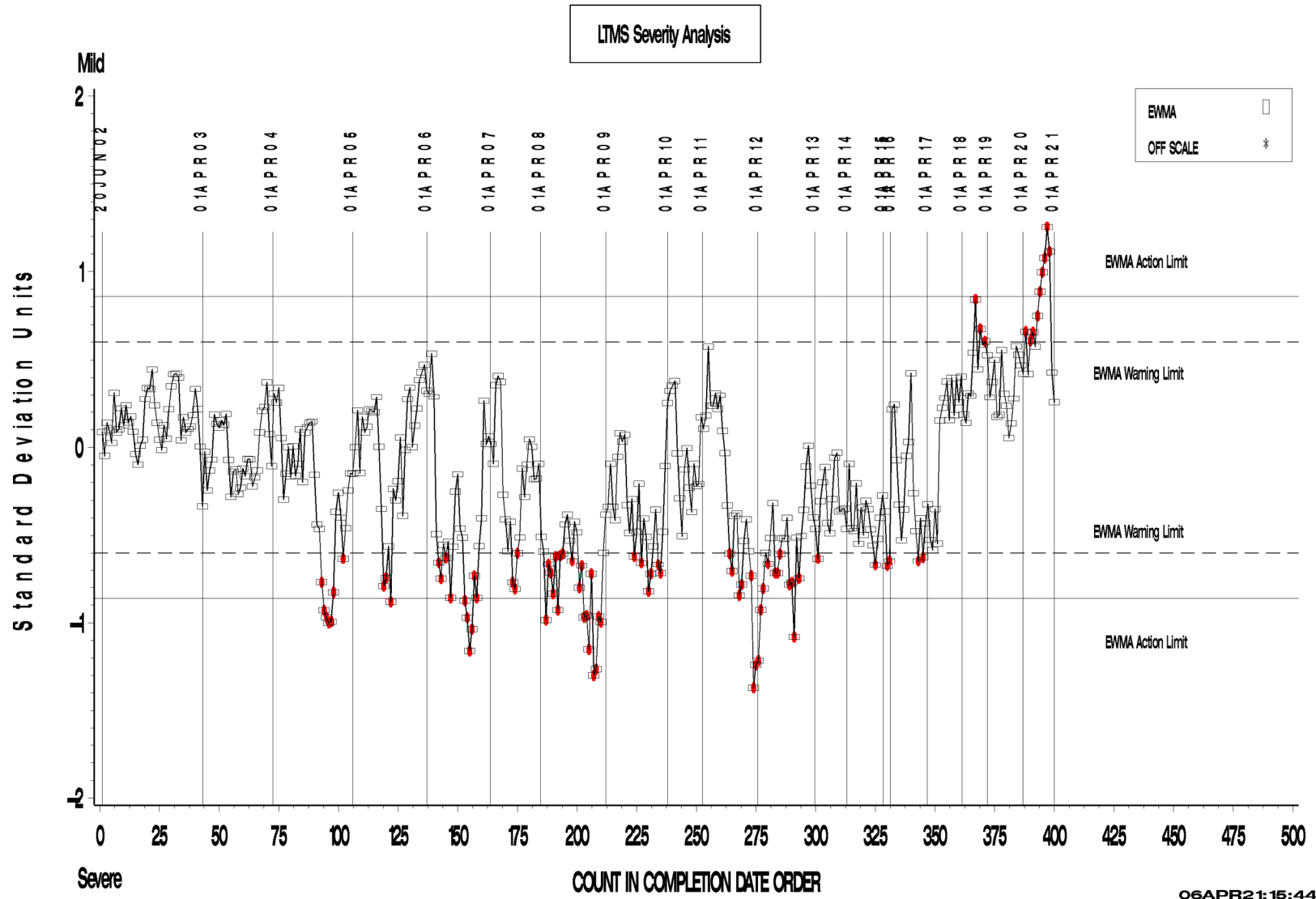
The precision action limit was not exceeded during this period.

Industry control charts follow.

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L-33-1 INDUSTRY OPERATIONALLY VALID DATA

FINAL RUST RESULT



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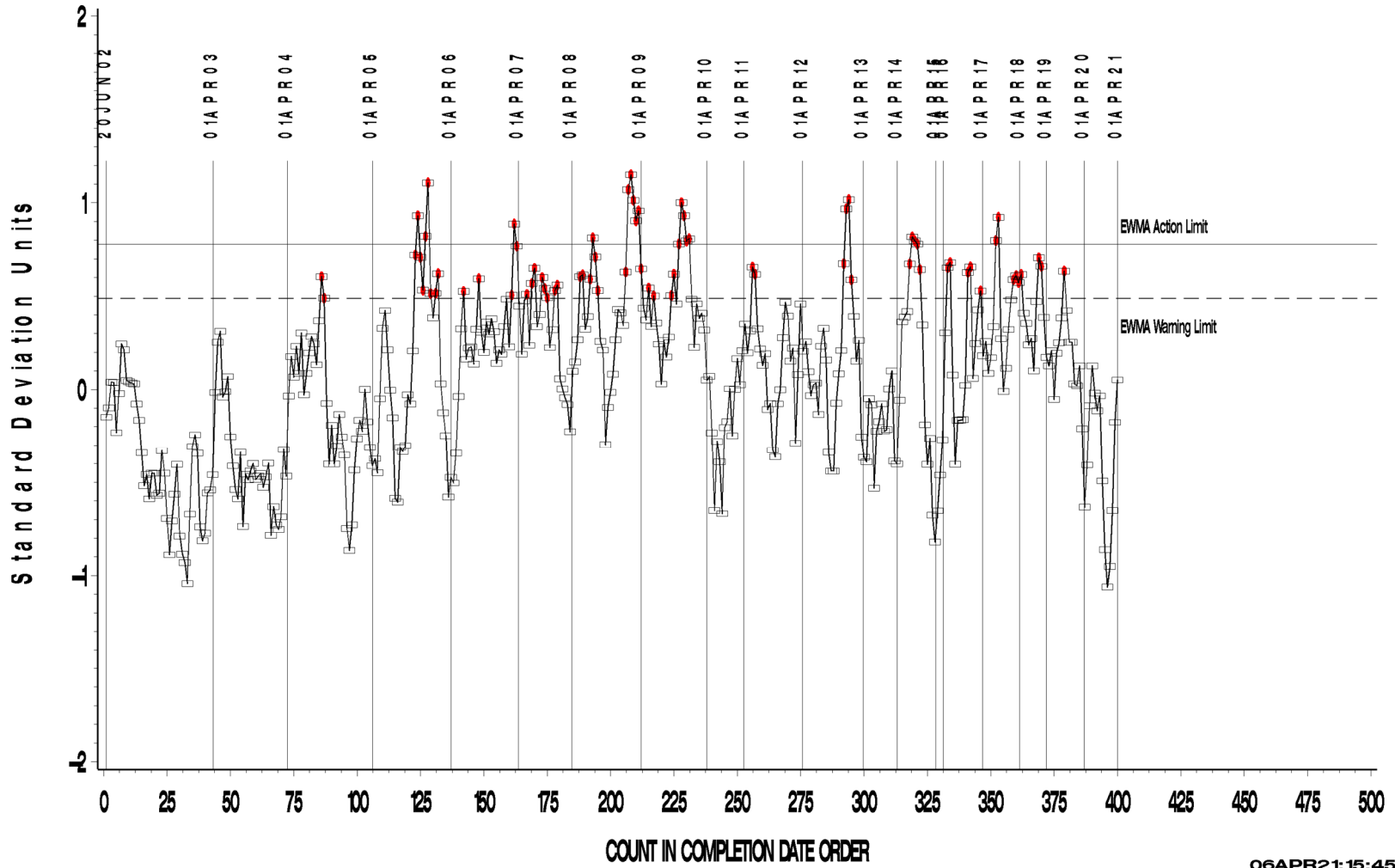
A Program of ASTM International

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L-33-1 INDUSTRY OPERATIONALLY VALID DATA

FINAL RUST RESULT

LTMS Precision Analysis



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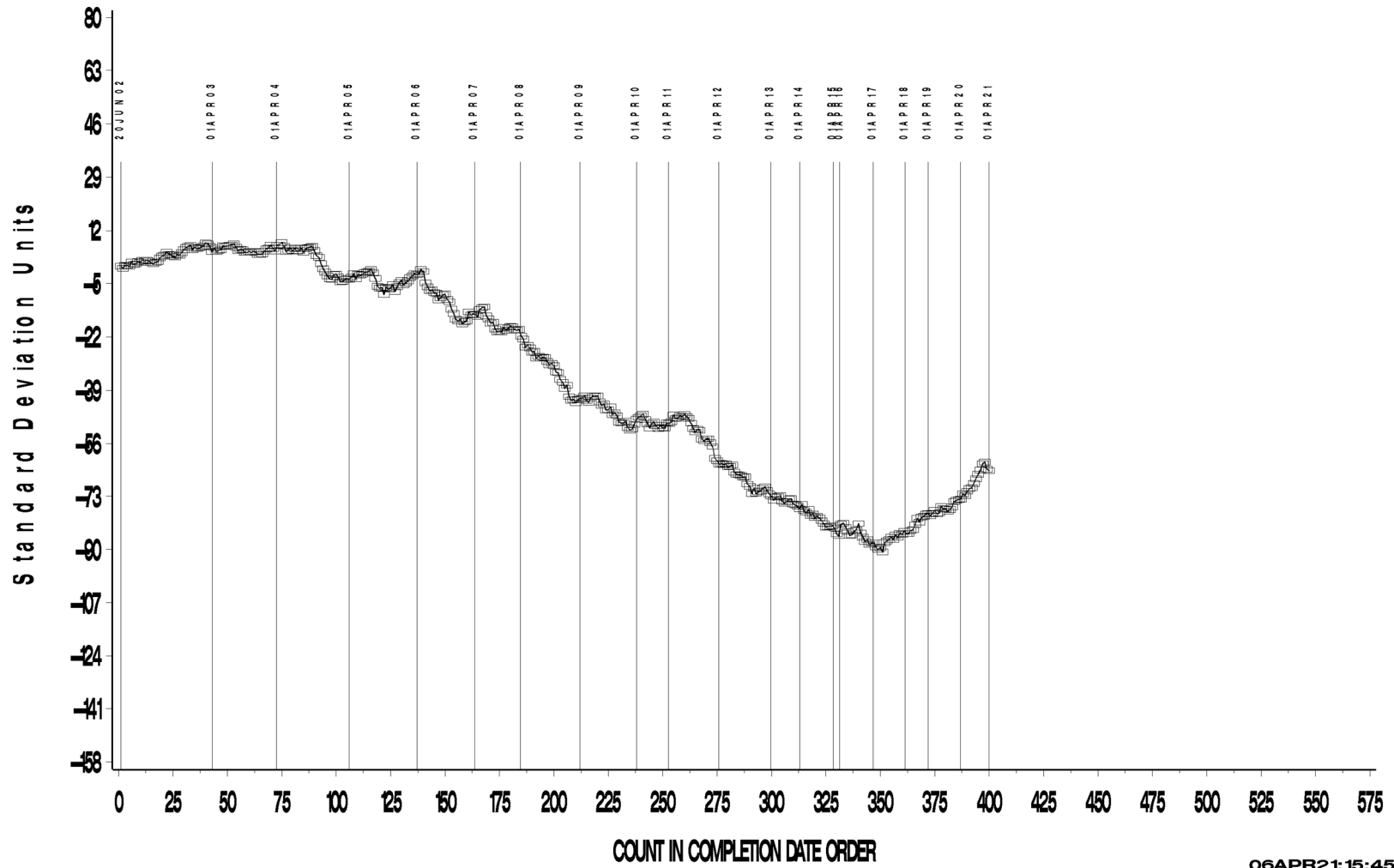
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L-33-1 INDUSTRY OPERATIONALLY VALID DATA

FINAL RUST RESULT

CUSUM Severity Analysis



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TIMELINE ADDITIONS

Effective Date	Information Letter	Event
November 11, 2020	20-03	Changes to the test method to incorporate the recently approved T1XX hardware, and future AAM hardware.
December 4, 2020	20-04	Removal of most mentions of the Dana hardware from the test method. Hardware has not been approved since December 31, 2018.
March 18, 2021	21-01	Correction to information letter 20-03 to properly reflect the name of American Axle & Manufacturing.

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LAB VISITS

No lab visits were conducted during this reporting period.

INFORMATION LETTERS

Information letter 20-03 was issued to incorporate the AAM T1XX hardware into the procedure. Information letter 20-04 was issued to remove Dana hardware from the procedure. Information letter 21-01 was issued as a correction to IL 20-03.

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STATUS OF REFERENCE OIL SUPPLY

Oil	Cans @ Labs	@ TMC	
		Cans	Gallons
123-2	17	79	79.0
155-1	18	36	36.8
155-2	6	257	257.3
Total	41	372	373.0

The TMC quantity remaining presumes usage only for L-33-1 testing. Oil 155-1/155-2 is also used in other test areas (L-37, L-37-1, L-60-1, and HTCT). 155-2 is a replacement oil for 155-1 and has not yet been approved for test use.