



Test Monitoring Center

203 Armstrong Drive, Freeport, PA 16229, USA

www.astmtmc.org
412-365-1000

MEMORANDUM: 24-017
DATE: May 21, 2024
TO: Matthew Sangpeal, Chairman, L-42 Surveillance Panel
FROM: Dylan Beck *Dylan Beck*
SUBJECT: L-42 Reference Oil Testing from October 1, 2023 through March 31, 2024

Attached is a summary of reference oil testing activity this period.

DJB/djb/mem23-017.djb.doc

cc: Jeff Clark

Sean Moyer

L-42 Surveillance Panel

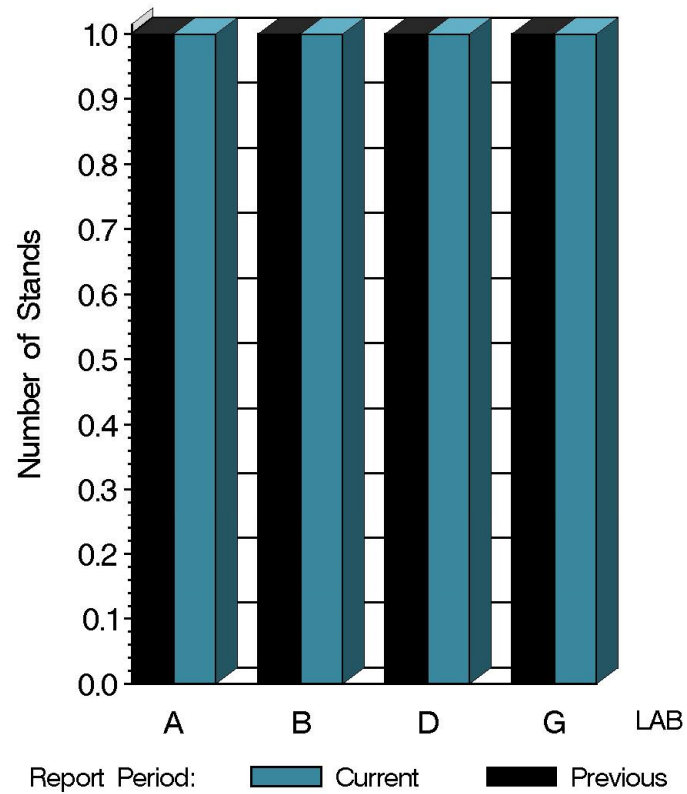
<https://www.astmtmc.org/ftp/docs/gear/l42/semiannualreports/l42-04-2024.pdf>

Distribution: email

L-42 (D7452)

	Reporting Data	Calibrated on 3-31-24
Number of Labs	4	4
Number of Stands	4	4

BY-LAB STAND DISTRIBUTION



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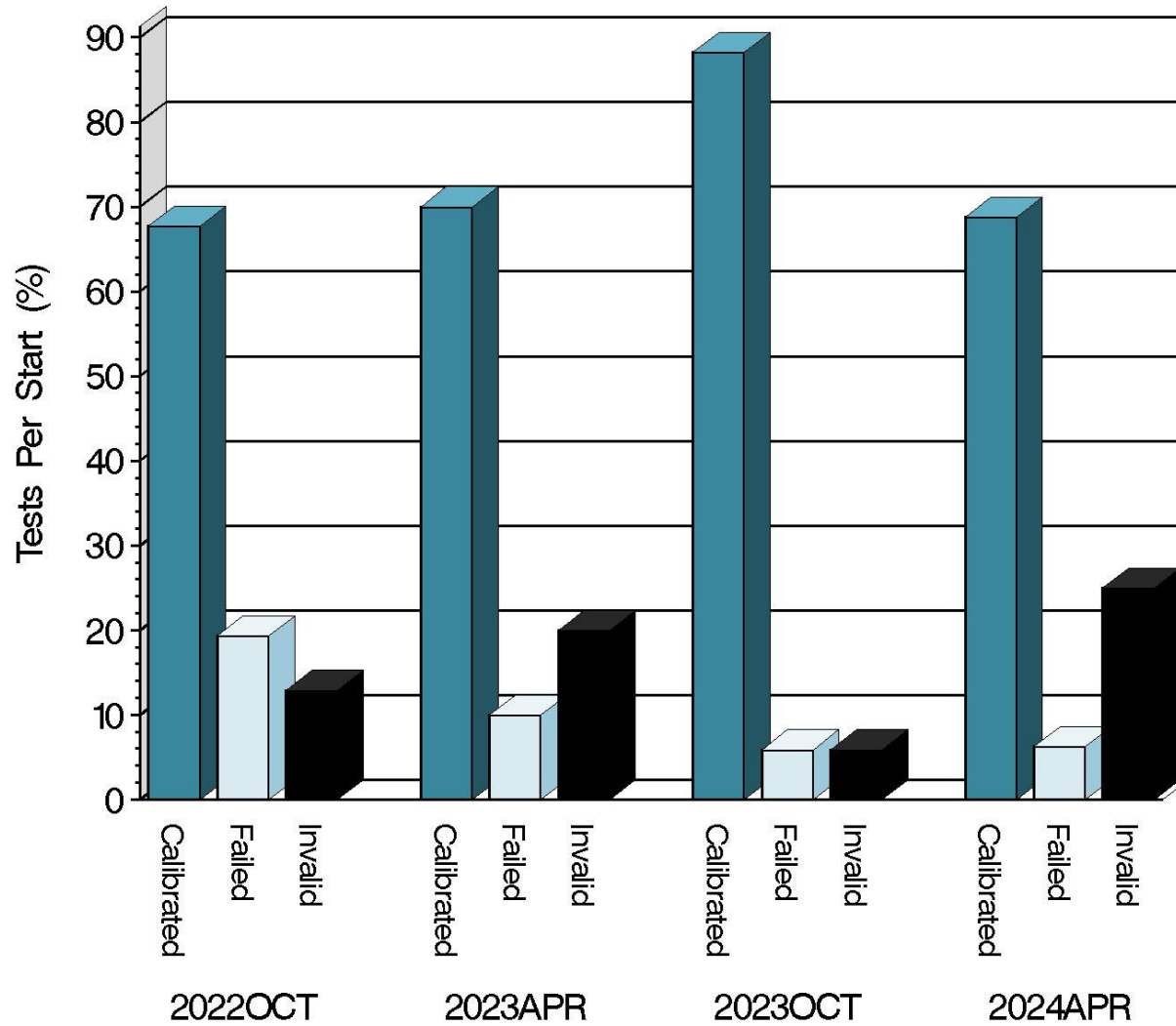
L-42 (D7452)

Test Distribution by Oil and Validity

				Totals			
				117	119	Last Period	This Period
Accepted for calibration	AC	11	0	15	11		
Rejected (Mild)	OC	1	0	1	1		
Rejected (Severe)	OC	0	0	0	0		
Rejected (Precision)	OC	0	0	0	0		
Operationally Invalid (determined by lab)	LC	1	0	1	1		
Unacceptable calibration run	MC	3	0	1	3		
Accepted discrimination	AS	0	10	11	10		
Operationally invalid discrimination run	LS	0	1	0	1		
Acceptable Information run	NI	4	0	10	4		
Total		20	11	43	31		

L-42 (D7452)

CALIBRATION ATTEMPT SUMMARY



Resolution

Report Period

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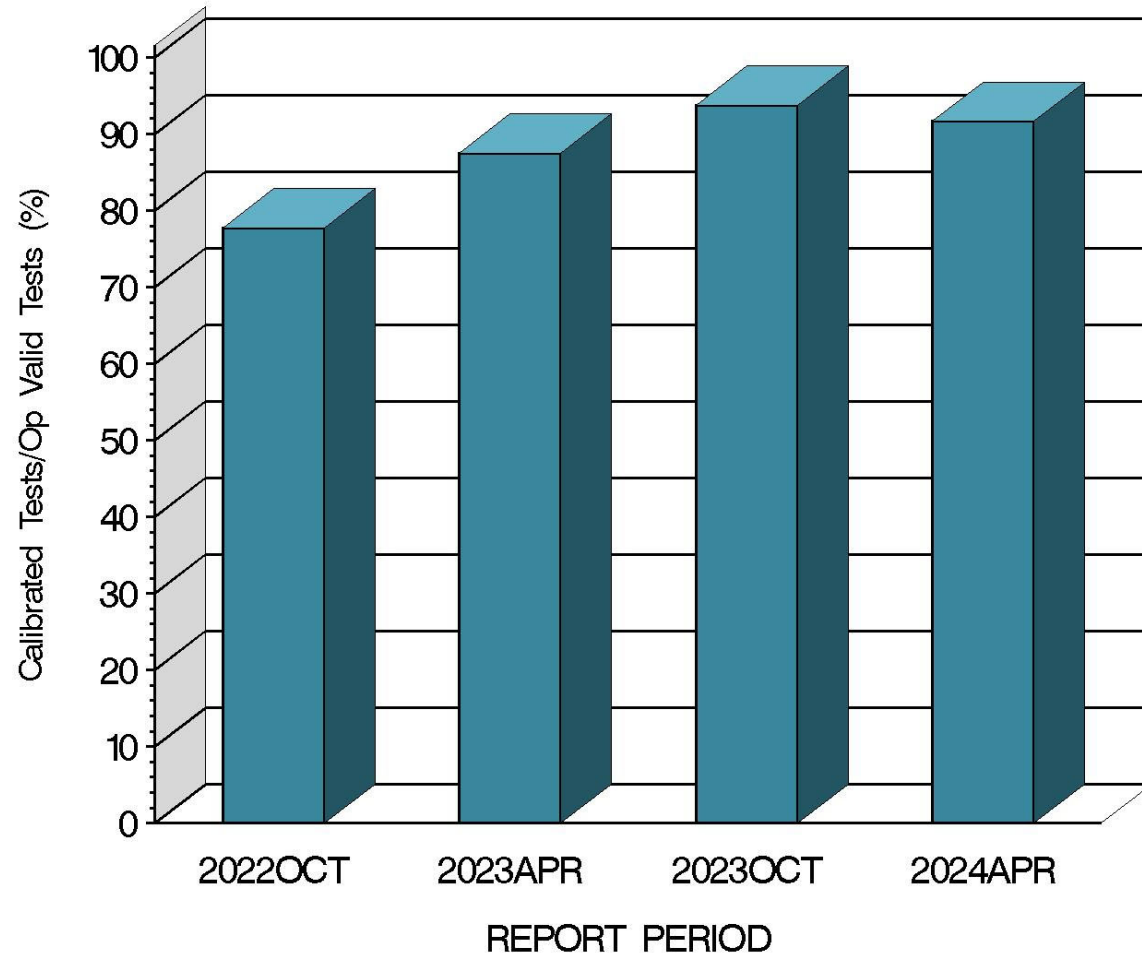
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OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA



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CAUSES FOR LOST TESTS

Lab	Cause	Loss Rate				Lost	Starts	%
		117	119	LC	LS			
G	Cooled after shock 1		•		•	1	20	5%
B	Wheel speed out of limits	•		•		1	3	33%
	Lost	1	1	1	1			
	Starts	20	11	21	21			
	%	5%	9%	4.8%	4.8%			

L-42 (D7452)

			Coast Side Pinion Scoring		
Oil	Gear Batch	N	Mean	Std. Dev.	Average Δ/s
117	C1L446/P8AD132	2	19.5	0.71	-0.64
117	C1L637/P8AD132	4	20.8	2.75	-0.41
117	MSPL0/P2AD01	1	10.0	.	-2.37
117	MSPL0/P2AD01	5	18.8	3.96	.

		Pooled Standard Deviation			
Lab	Coast Side Pinion Scoring Δ/s	df	Coast Side Pinion Scoring	Coast Side Ring Scoring	Shock Series I Coast Side Ring Scoring
A	-0.55	1	0.00	0.00	0.00
B	-0.73	1	0.00	0.00	0.00
D	-0.41	4	2.75	1.29	0.00
G	-2.37	1	5.05	3.49	0.00

L-42 (D7452)

SUMMARY OF SEVERITY & PRECISION

Severity

Pinion scoring remained within the limits this period.

Precision

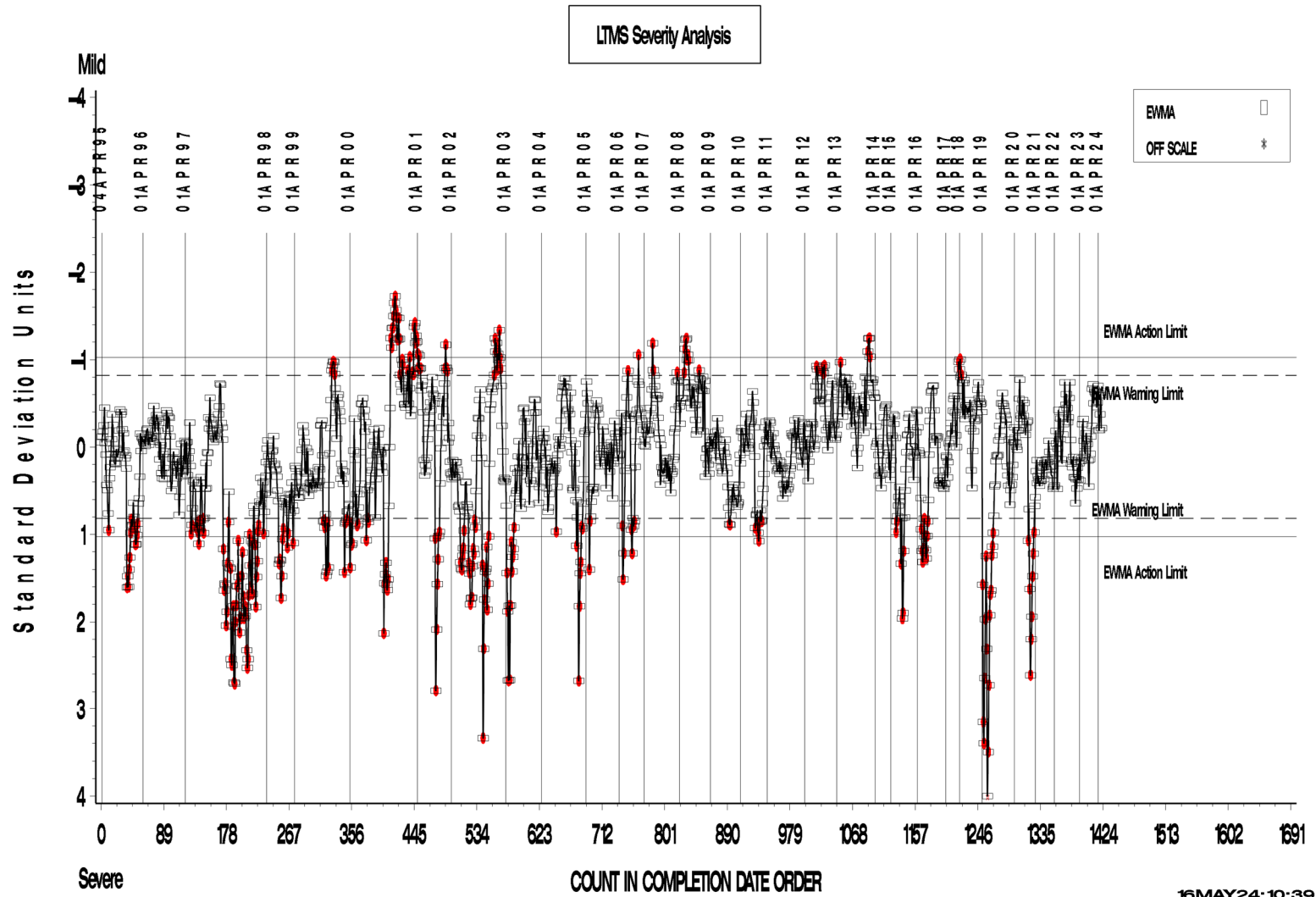
Pinion scoring remained within the limits this period.

Industry control charts follow.

L-42 (D7452)

L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE



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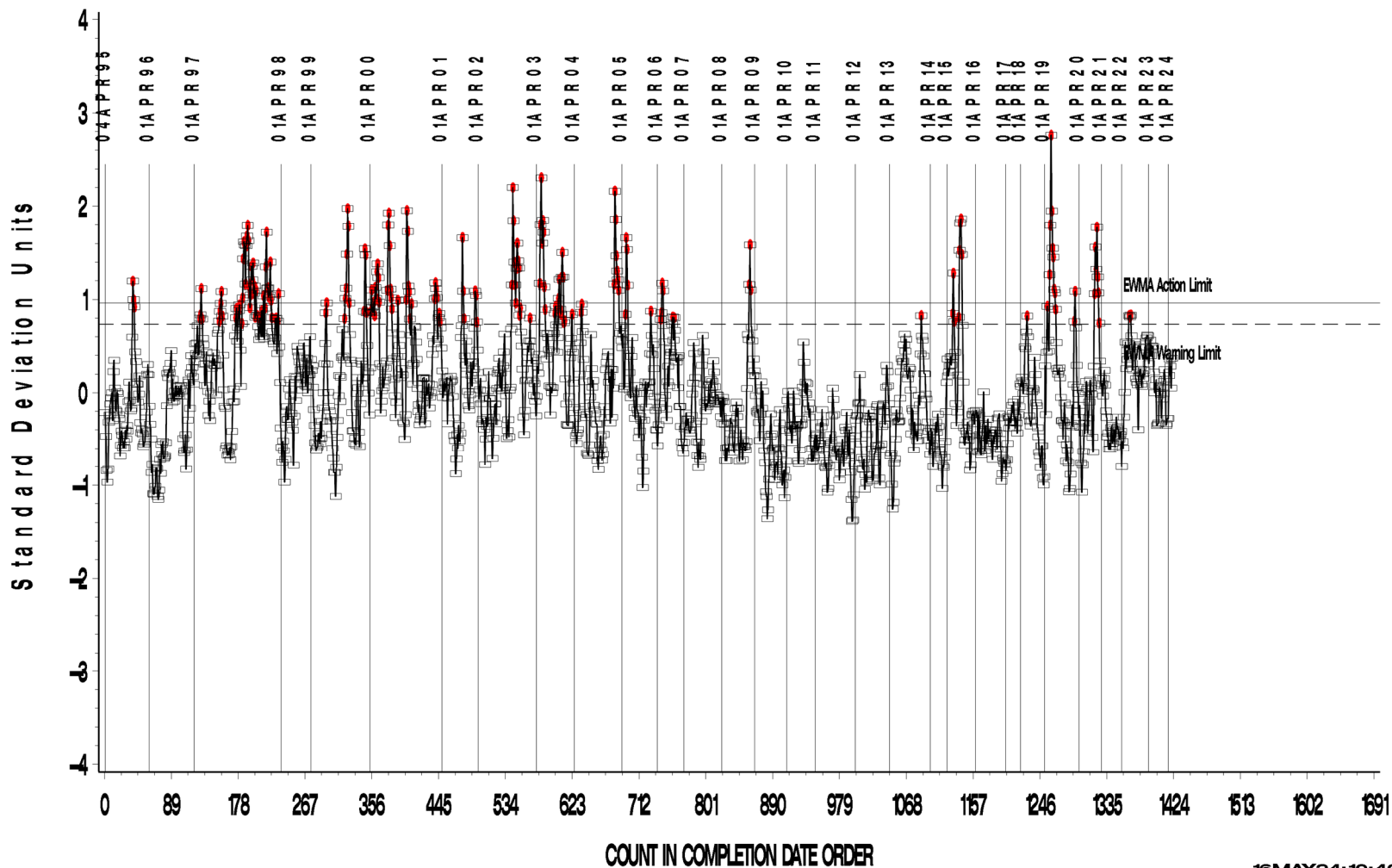
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L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

LTMS Precision Analysis



16MAY24: 10:40



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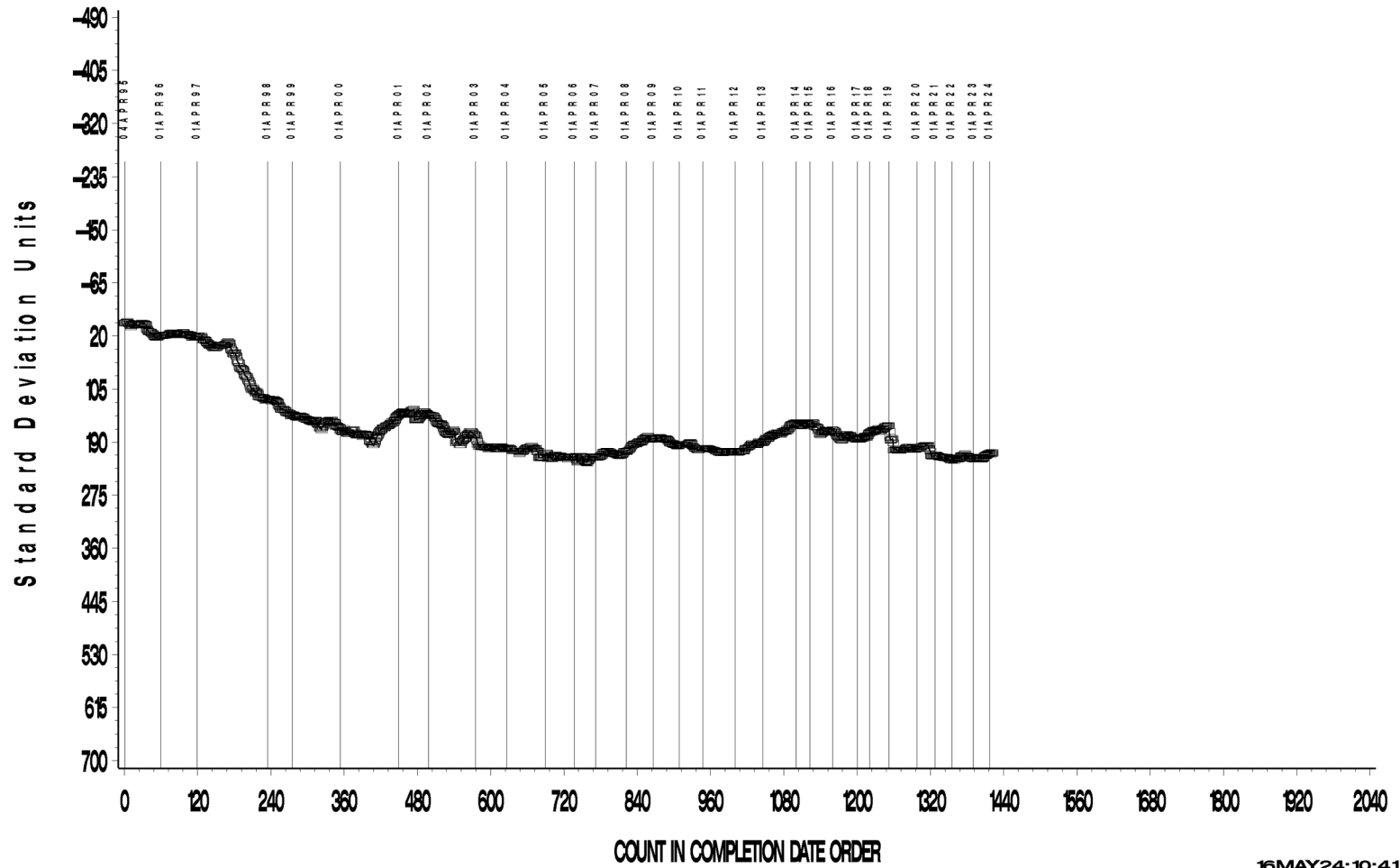
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L-42 INDUSTRY OPERATIONALLY VALID DATA

FINAL EOT PINION SCORING COAST SIDE

CUSUM Severity Analysis



16MAY24:10:41



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TIMELINE ADDITIONS

Effective Date	Information Letter	Event
November 8, 2023	IL 23-1	Update to figures A6.11-6.16 to remove specification for test setpoints from the figures that appear elsewhere in the test method.
October 30, 2023	TMC Memo 23-039	Approval of 2023 hardware batch. The hardware batch will use the same targets for reference oil 117.

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LAB VISITS

One lab visit was conducted during this reporting period. All inspected aspects of the test stand were found to be in compliance with the test method.

INFORMATION LETTERS

Information letter 23-01 was issued during this reporting period. See chart on previous page for more details on this information letter.



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STATUS OF REFERENCE OIL SUPPLY

Oil	Tests	Year	Blend Quantit	TMC Inventor	Estimated Life	Comment
117	L-42	2013	550	238.6	9 years	
119	L-42	2018	54	7.2	1 year	Reblend available but not yet approved by panel

Oil 117 meets J2360 specifications, and produces somewhat milder scoring than its predecessor 116-1. Oil 117 has been implemented for use as the new “pass” oil with a correction factor +6% for the pinion scoring result and +4% for the ring scoring result.

119 oil was approved as a discrimination oil in May 2020. There are only 7 gallons remaining of 119. A reblend has been secured by the TMC and is currently going through approval process by the surveillance panel.