



A Program of ASTM International

Test Monitoring Center

<https://www.astmtmc.org>

ASTM D02.B2 Semi-Annual Report Heavy Duty Reference Oil Testing

Fall 2021

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Heavy Duty Testing

Executive Summary

▶ Test Issues

- Alternate fuel supplier criteria discussions across test areas.
- COAT to EOAT equivalency process ongoing.
- T12 new hardware excessive oil consumption issue resolved by screening of parts and approval of specific piston crown batch.
- Re-blends of 823 and 1005-5 received.

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Calibrated Labs and Stands*

Test	Labs	Stands
1K	1	1
1N	3	5
1M-PC	0	0
1P	0	0
1R	1	1
C13	2	2
ISB	4	5
ISM	3	3
EOAT	1	1
RFWT	2	2
T-8/E	1	1
T-11	2	4
T-12/T-12A	3/3	3/3
T-13	4	6
COAT	2	2
DD13	3	3

*As of 10/1/2021

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SCOTE 1K

»» October 2021

1 K Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	1
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		1

1 K Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

1 K Lost Tests*

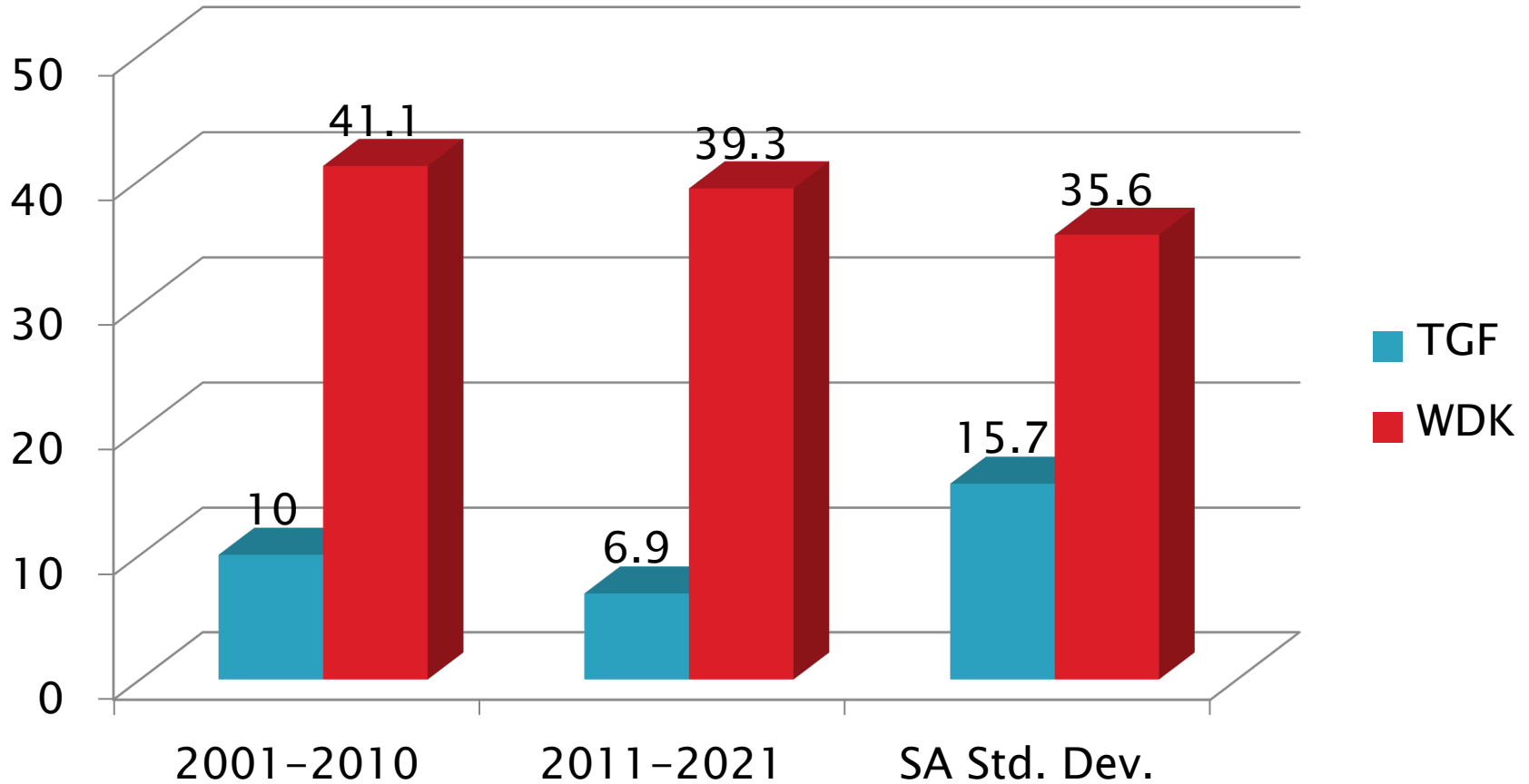
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

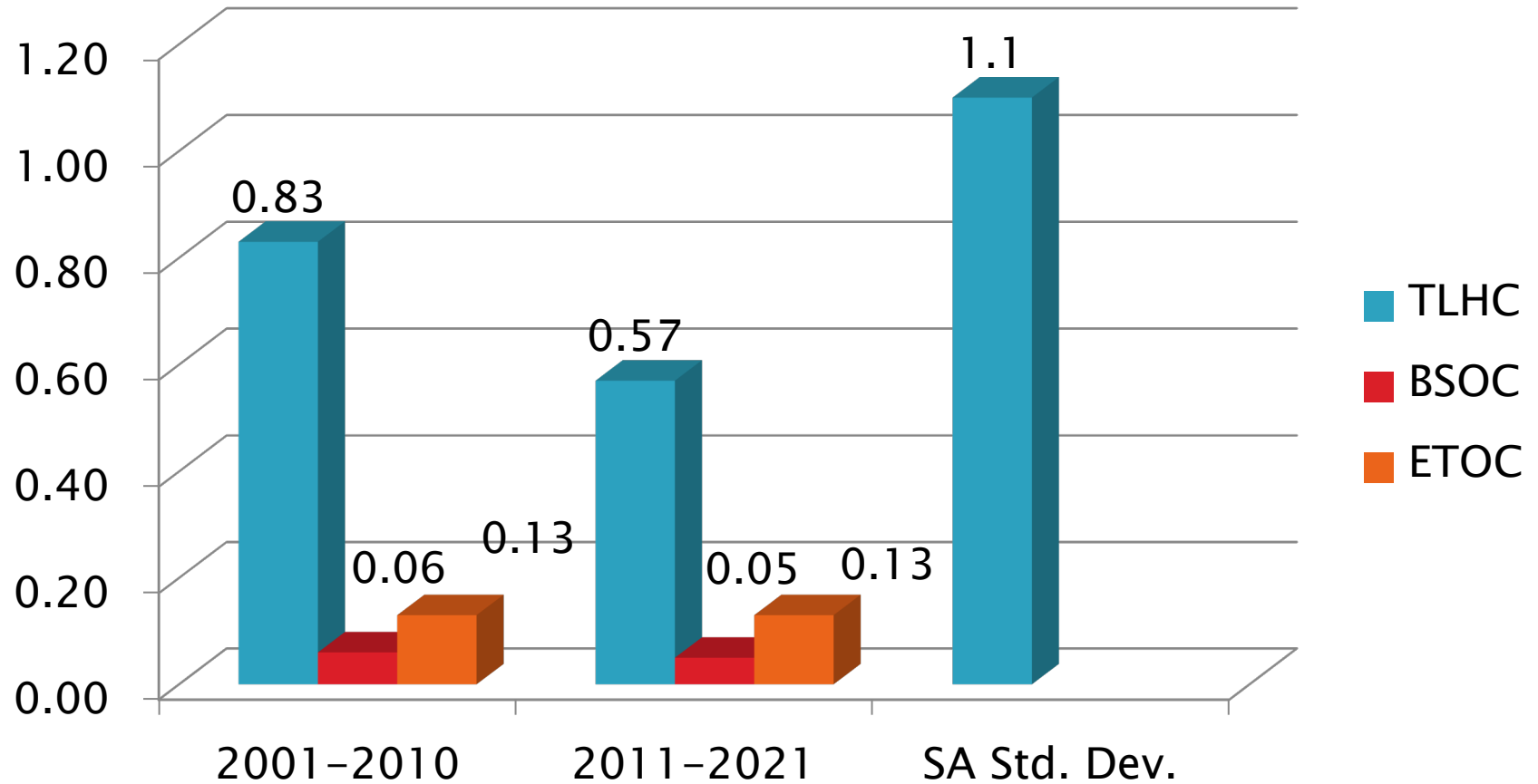
1 K Test Severity

- ▶ TGF in severity warning alarm in the mild direction
- ▶ BSOC in severity action alarm in the mild direction

1 K Precision Estimates



1 K Precision Estimates



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SCOTE 1 N

»» October 2021

1 N Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	3
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Informational	NN	0
Total		3

1 N Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

1 N Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

1 N Test Severity

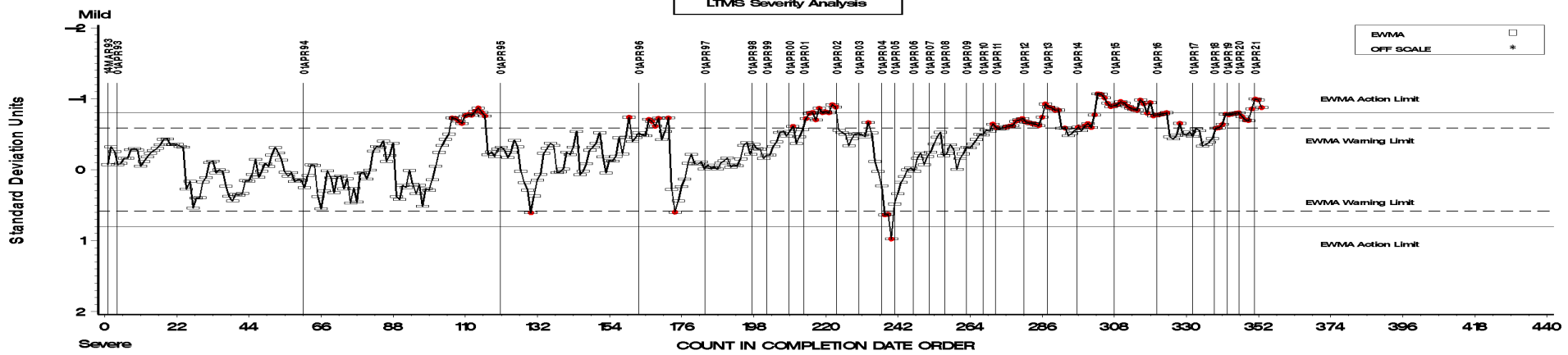
- ▶ WDN and TLHC are in control.
- ▶ TGF in precision warning alarm.
- ▶ BSOC in severity action alarm in mild direction
- ▶ Severity trends are being evaluated by surveillance panel

CATERPILLAR 1N INDUSTRY OPERATIONAL VALID DATA

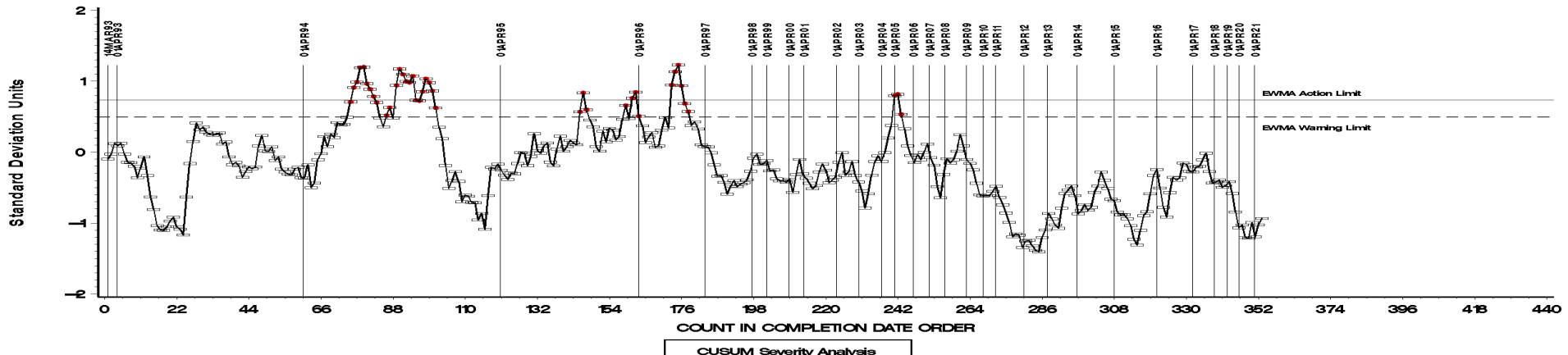


BSOC

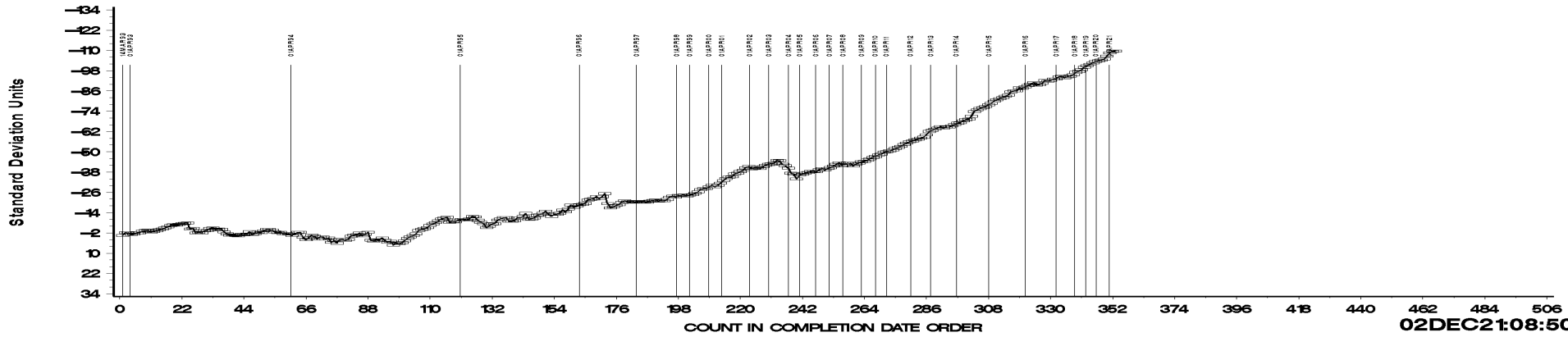
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

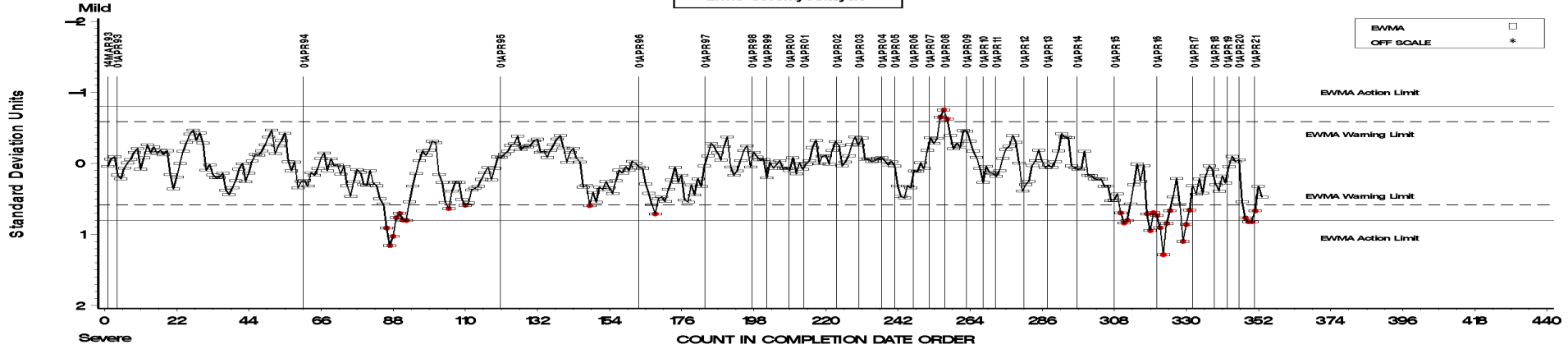


CATERPILLAR 1N INDUSTRY OPERATIONALLY VALID DATA

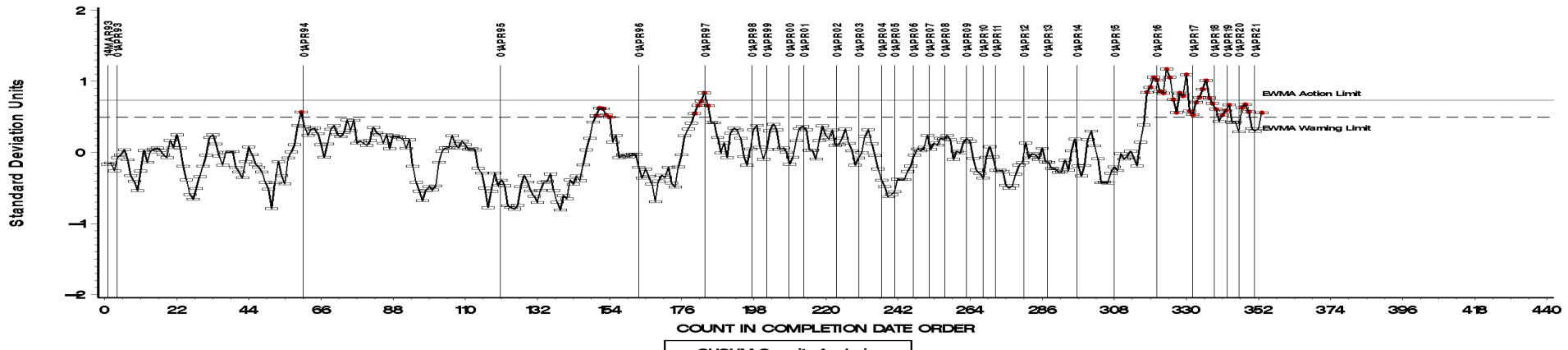


FINAL CORRECTED TGF

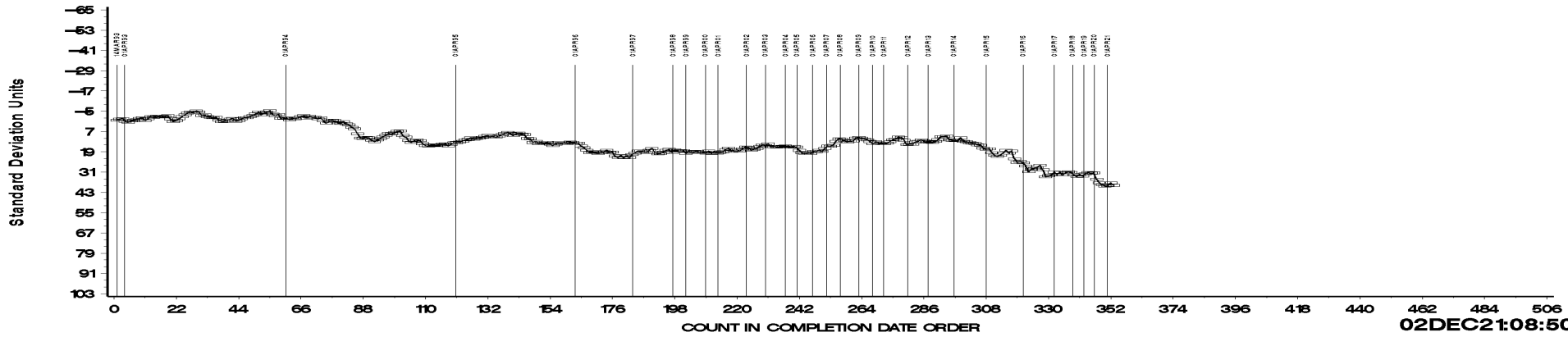
LTMS Severity Analysis



LTMS Precision Analysis



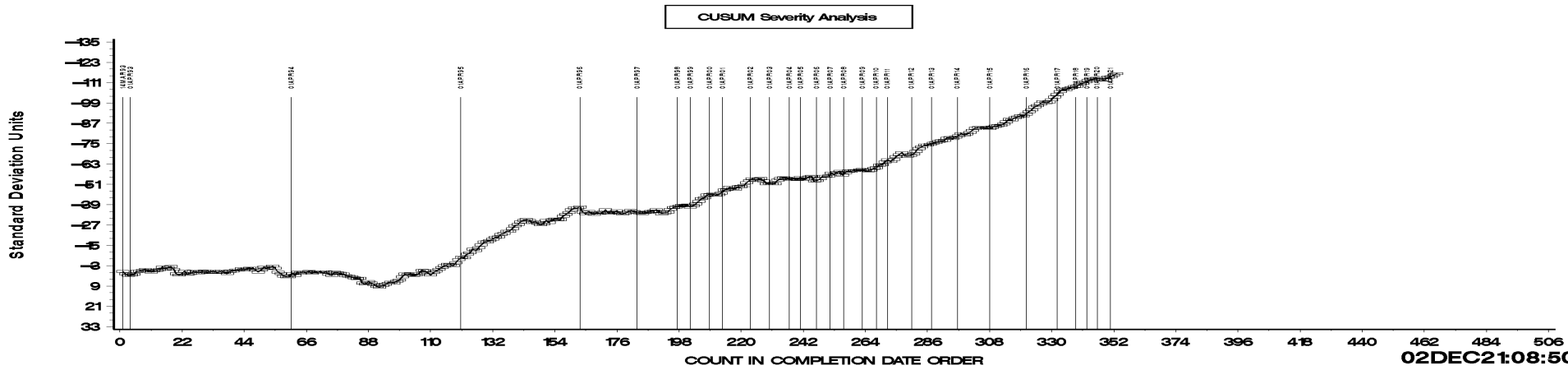
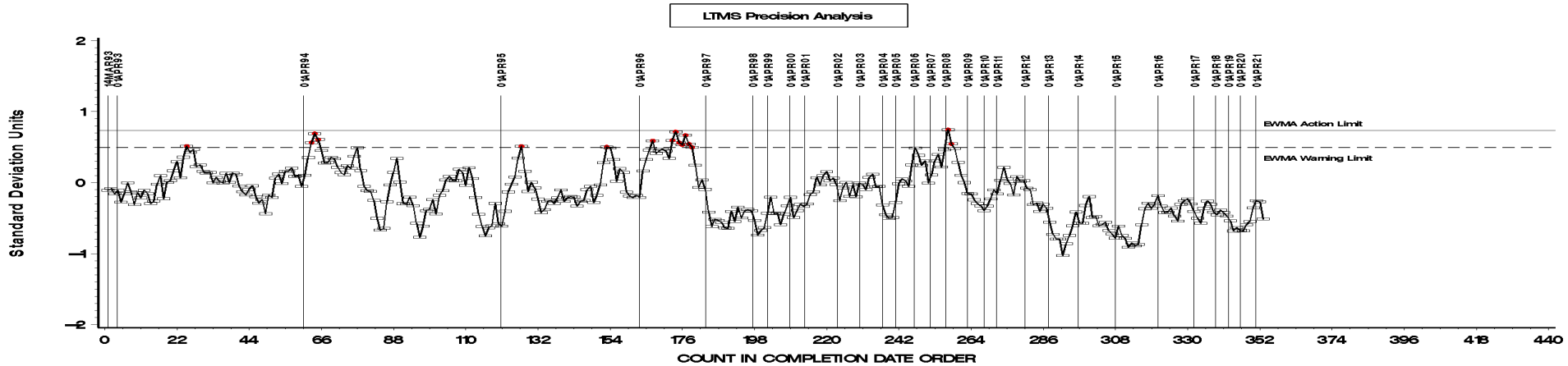
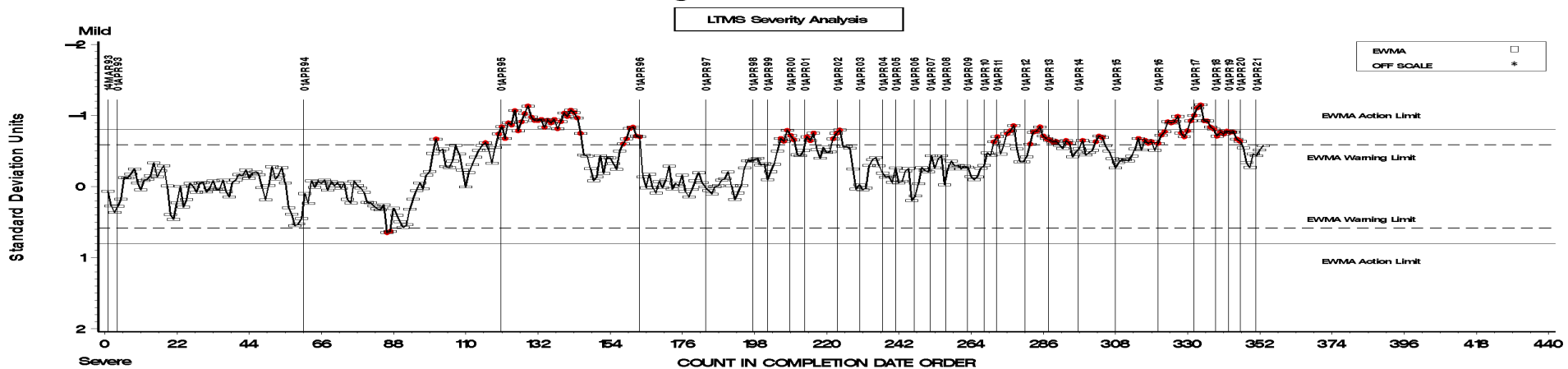
CUSUM Severity Analysis



CATERPILLAR 1N INDUSTRY OPERATIONALLY VALID DATA

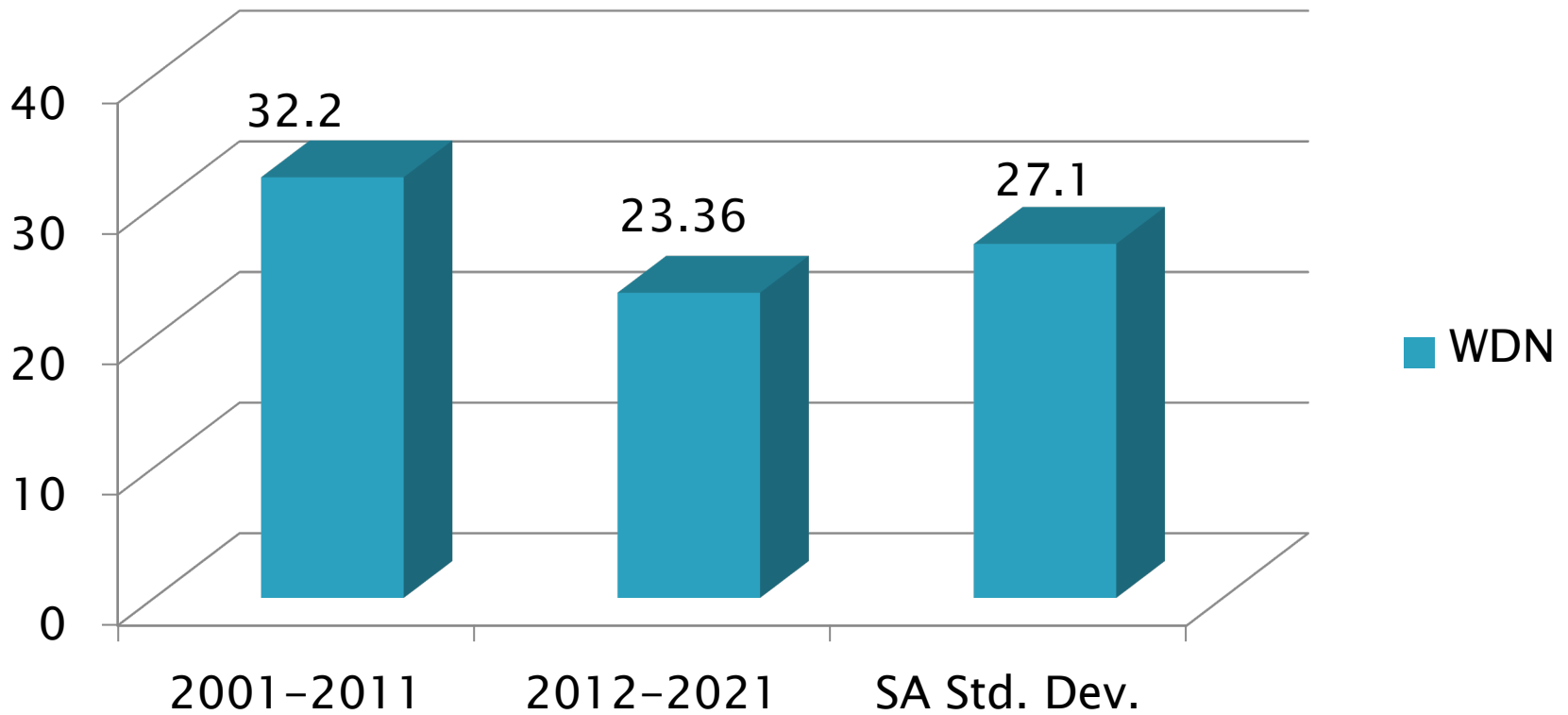


Weighted Total Demerits

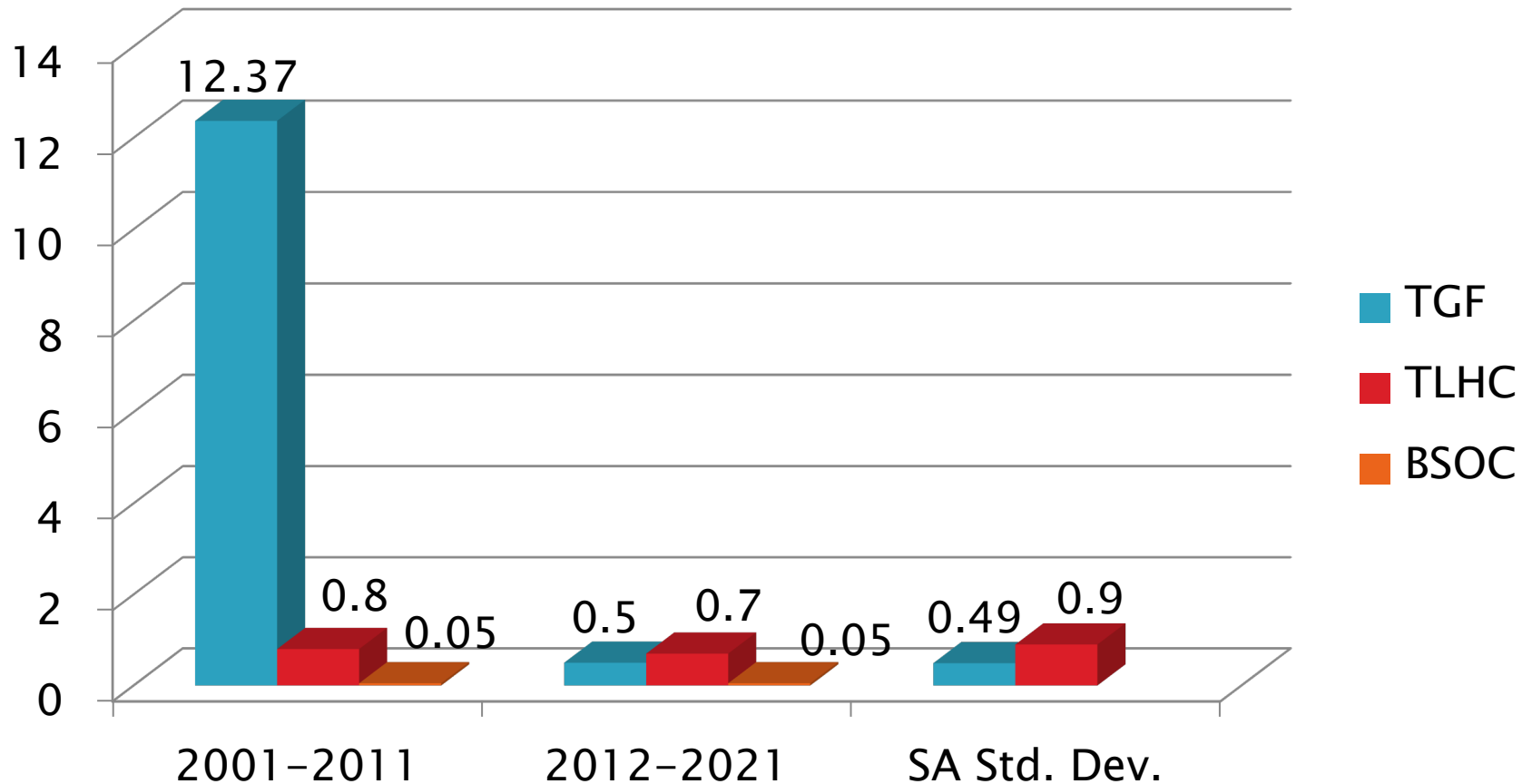


1 N Precision Estimates

WDN



1N Precision Estimates



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SCOTE 1 M-PC

»» October 2021

1 M-PC Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Total		0

1 M-PC Failed Tests

Failed Parameter	Number of Tests
No Failed Test	0
Total	0

1 M-PC Lost Tests*

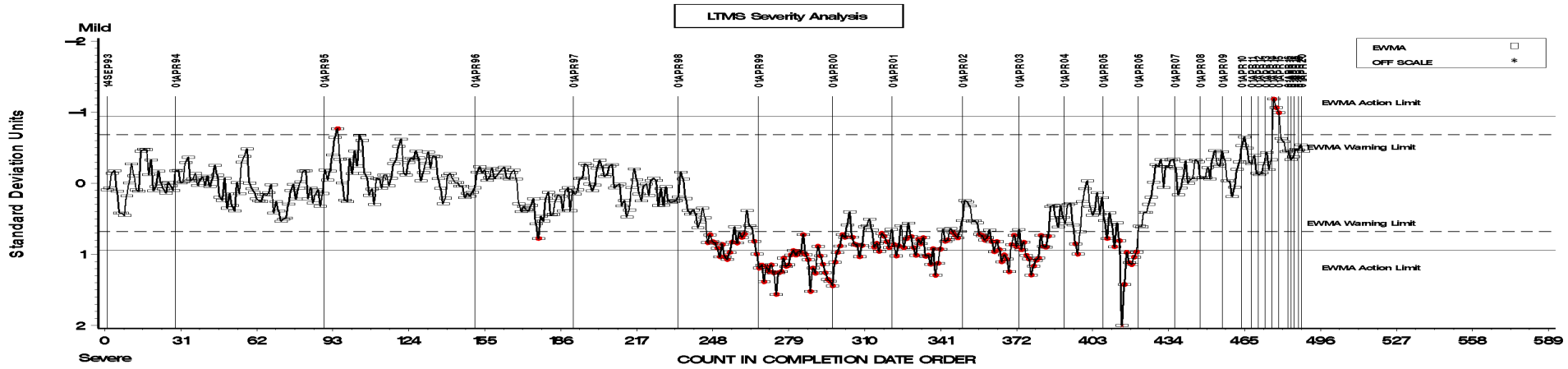
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

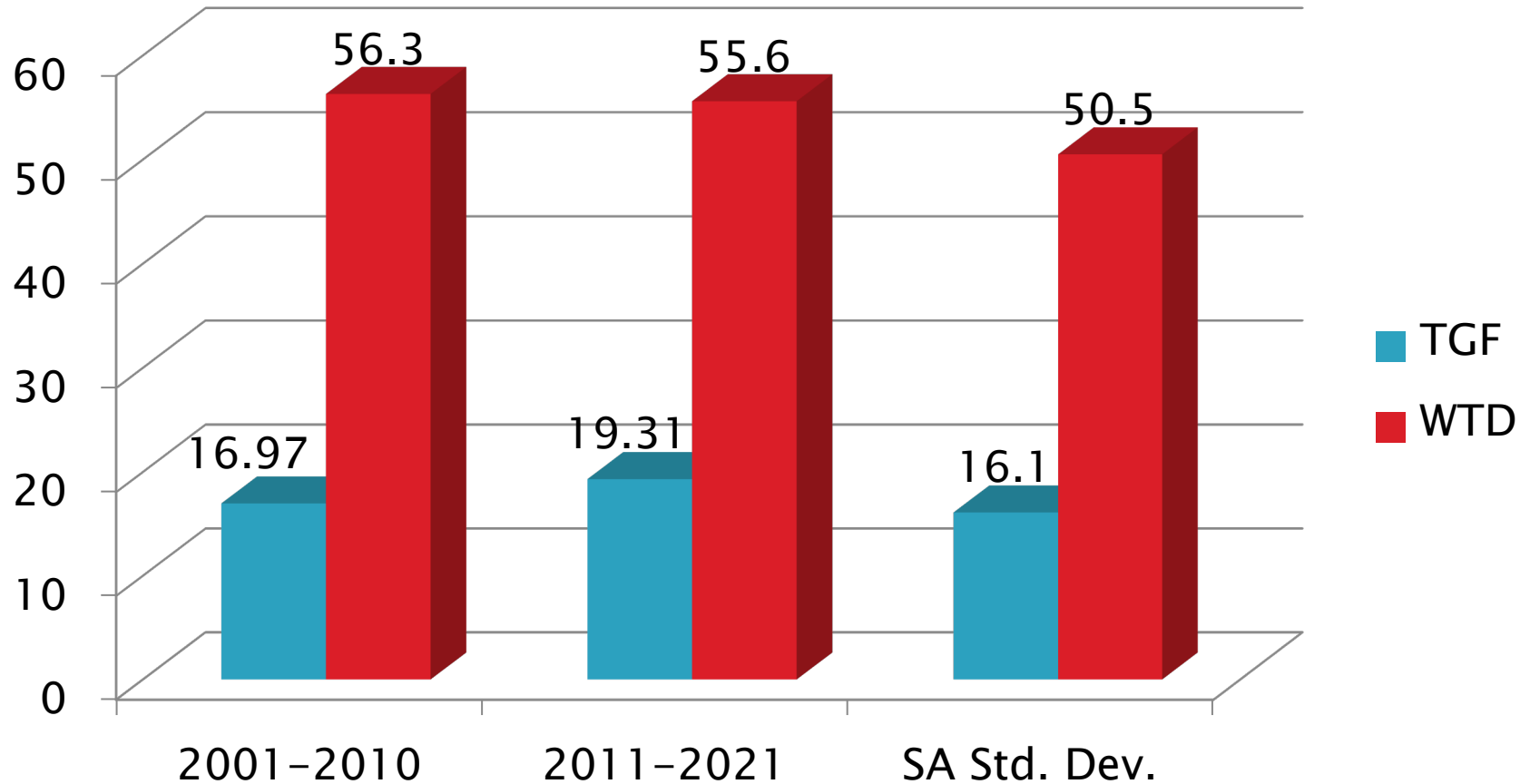
1 M-PC Test Severity

- ▶ As no 1 M-PC tests were run during this period no statement on test severity can be made.

Weighted Total Demerits



1 MPC Precision Estimates



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SCOTE 1 P

»» October 2021

1P Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	2
Total		2

1 P Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

1 P Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	Piston Scuffing	1
Aborted	High oil consumption	1
Total		2

*Invalid and aborted tests

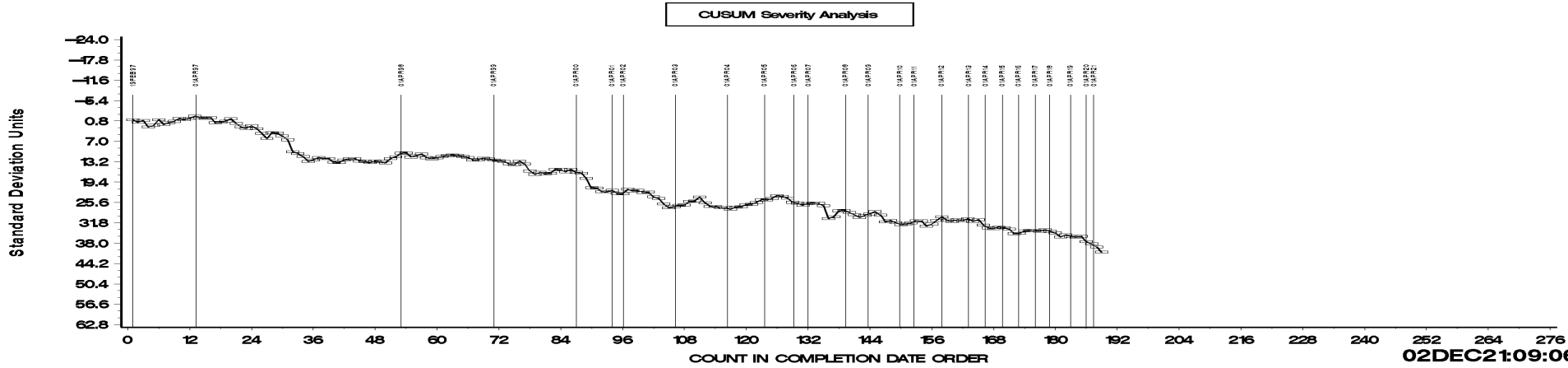
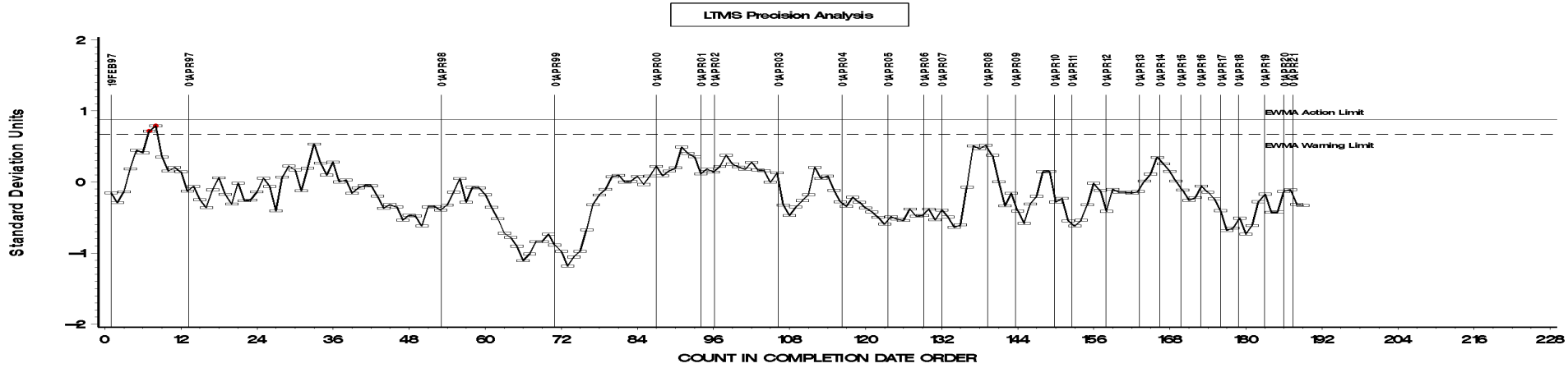
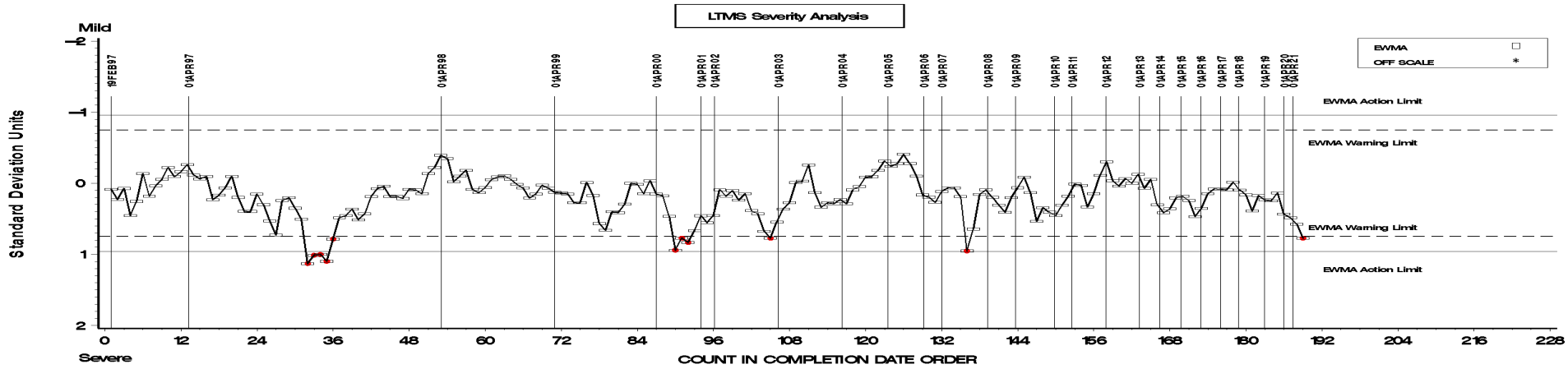
1 P Test Severity

- ▶ As no chartable 1P tests were run during this period no statement on test severity can be made.

CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA



WEIGHTED TOTAL DEMERITS

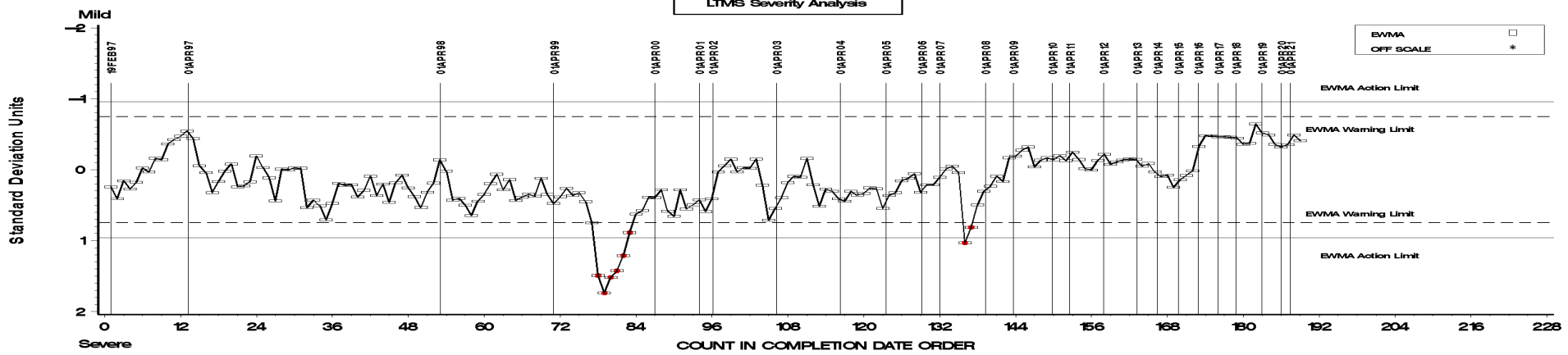


CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

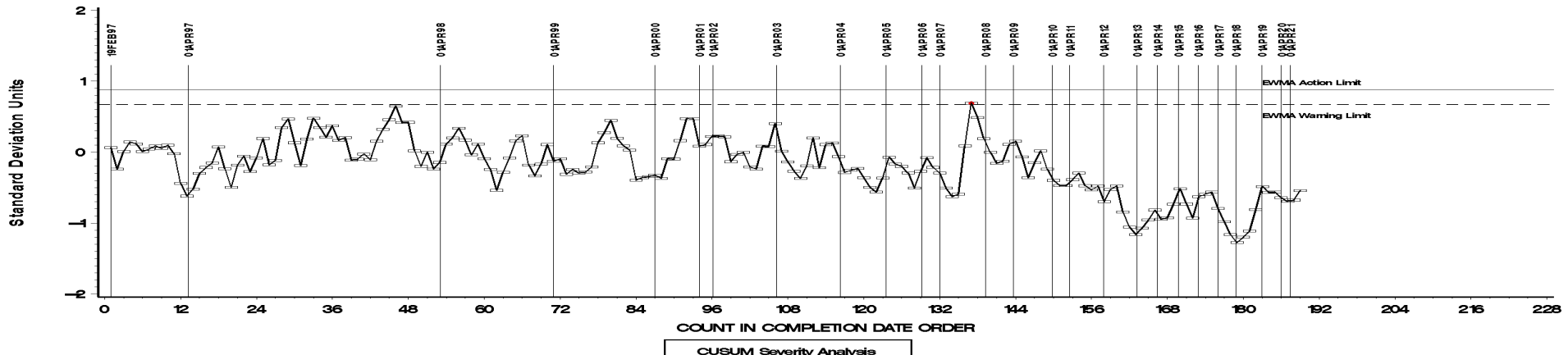


TOP GROOVE CARBON

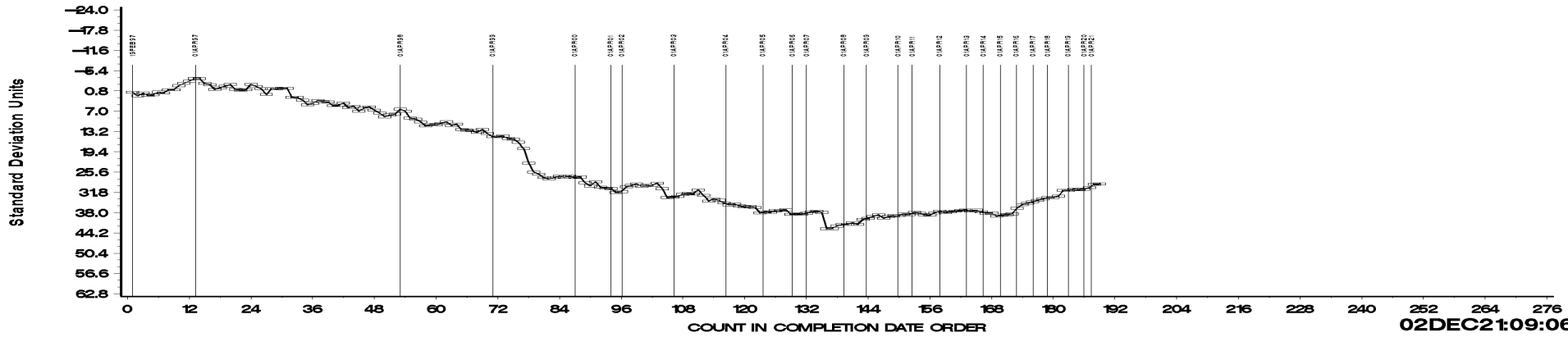
LTMS Severity Analysis



LTMS Precision Analysis

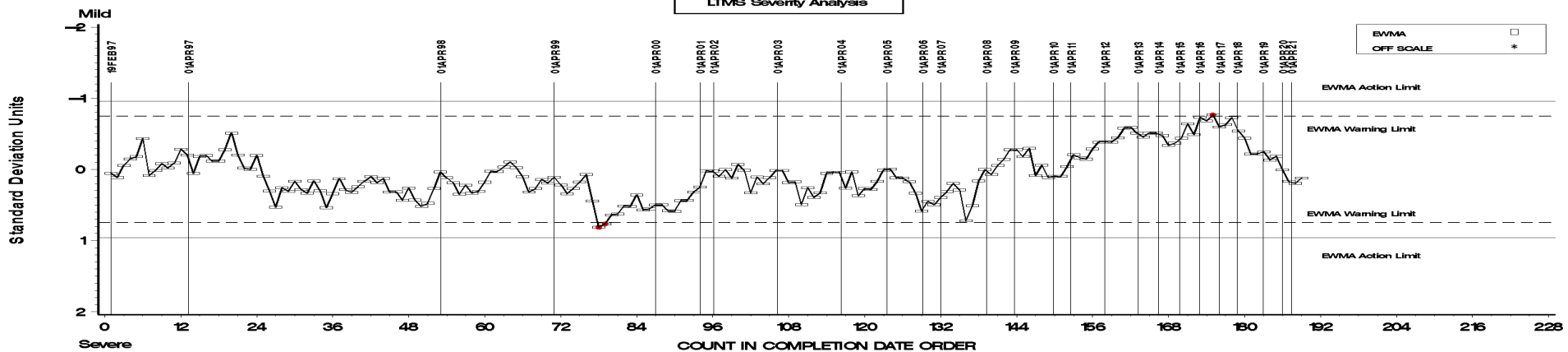


CUSUM Severity Analysis

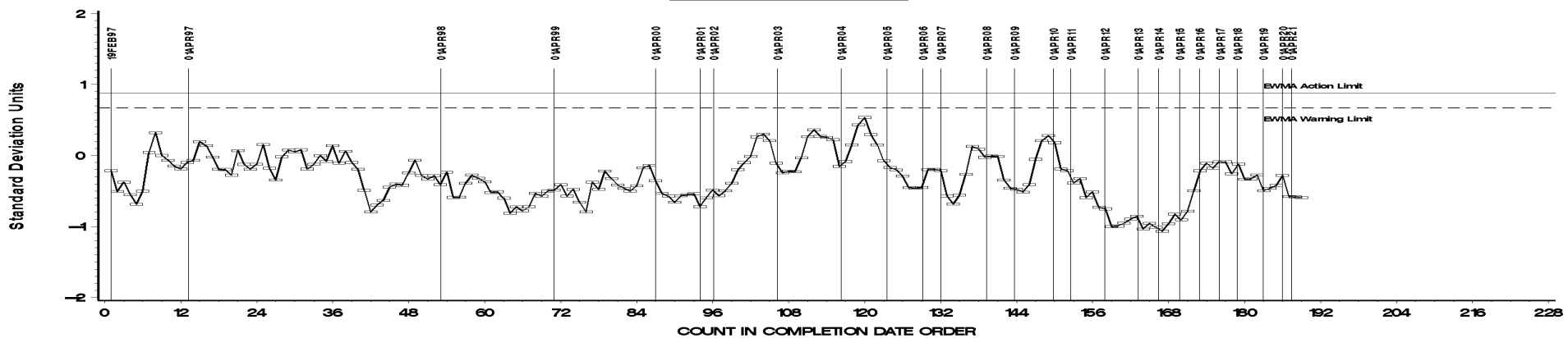


TOP LAND CARBON

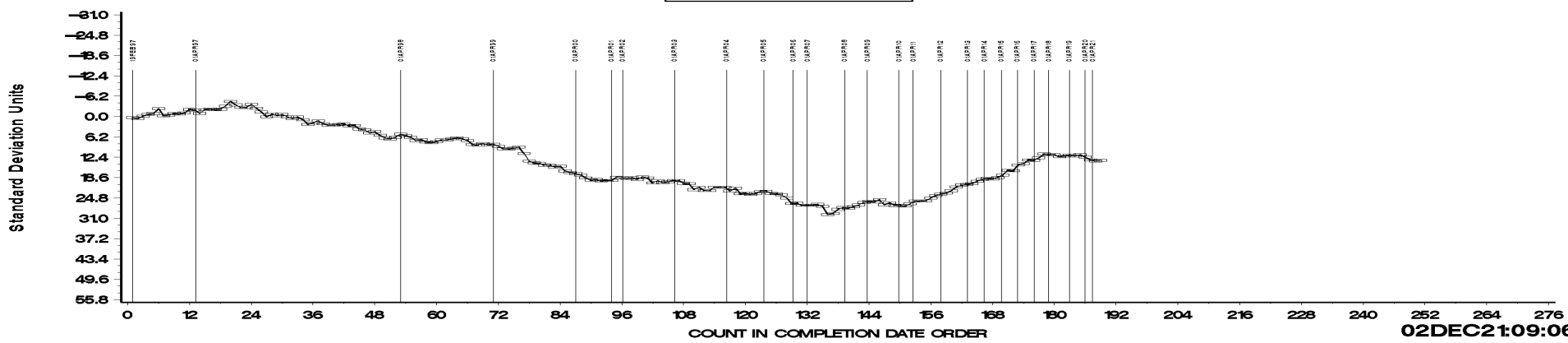
LTMS Severity Analysis



LTMS Precision Analysis

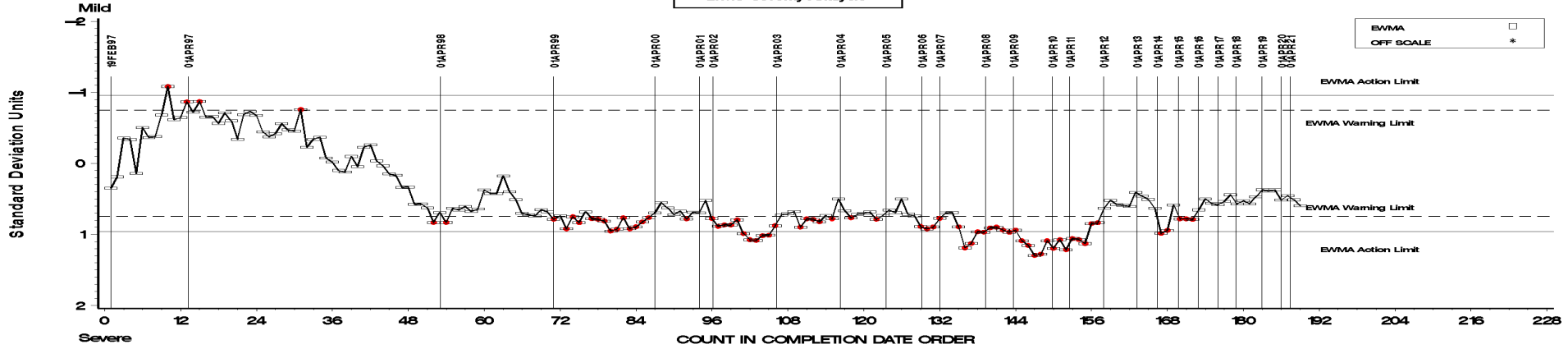


CUSUM Severity Analysis

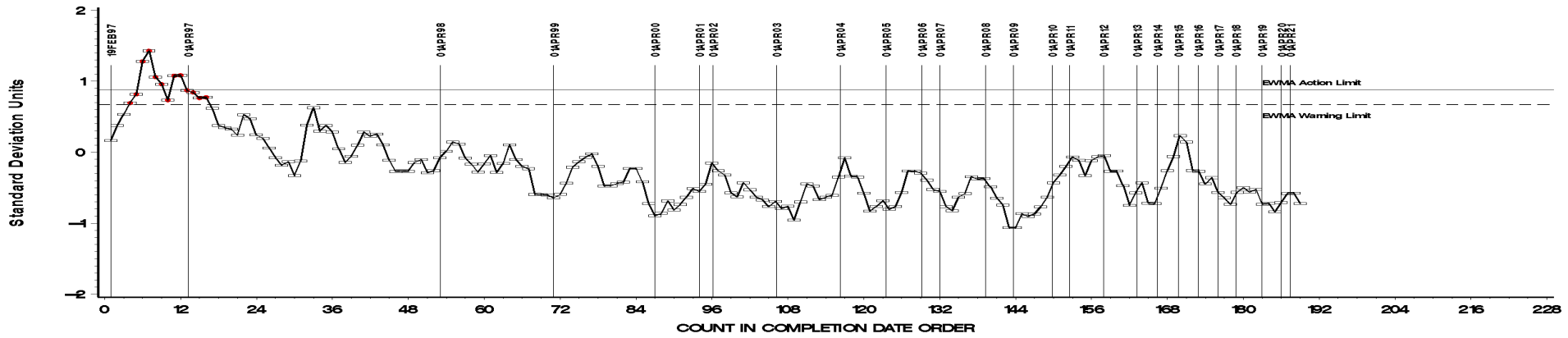


OIL CONSUMPTION

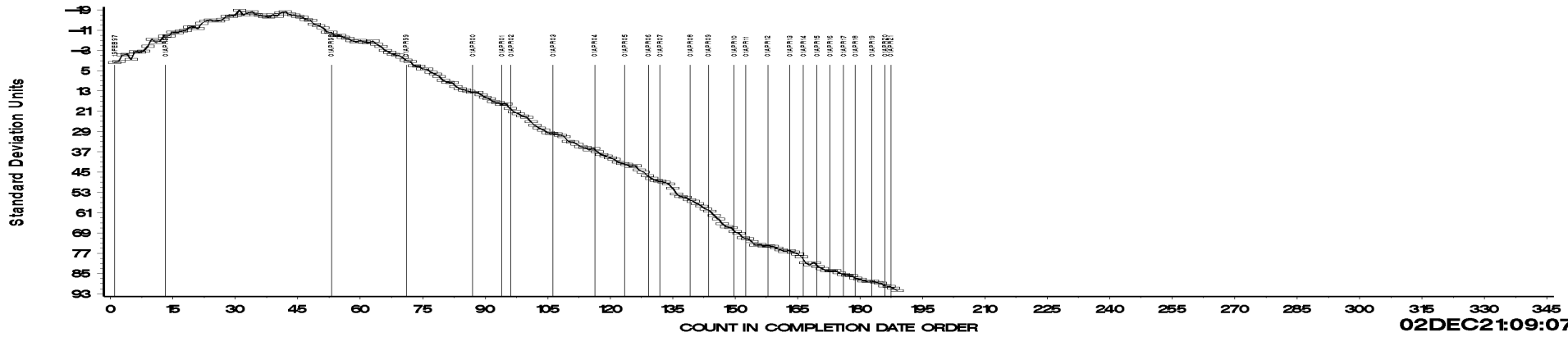
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

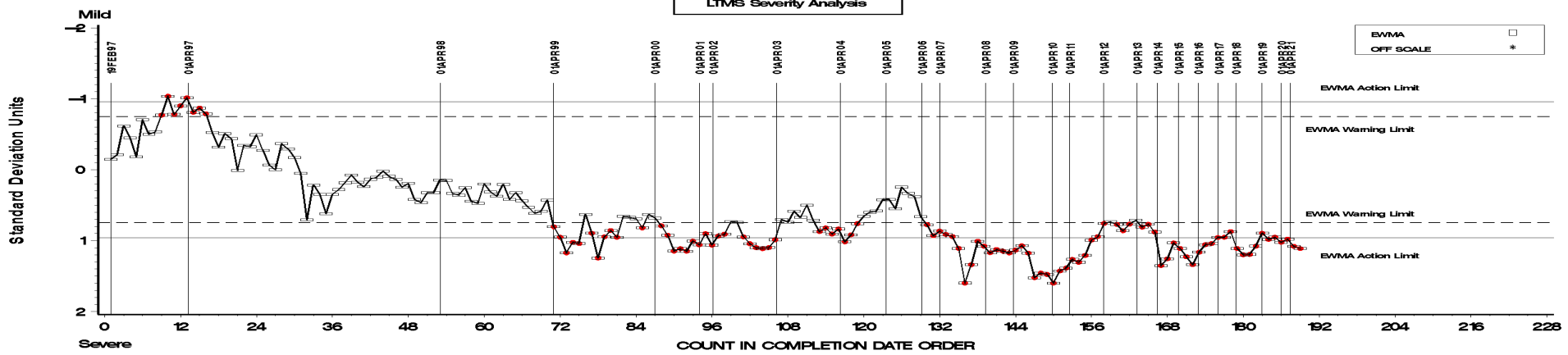


CATERPILLAR 1P INDUSTRY OPERATIONALLY VALID DATA

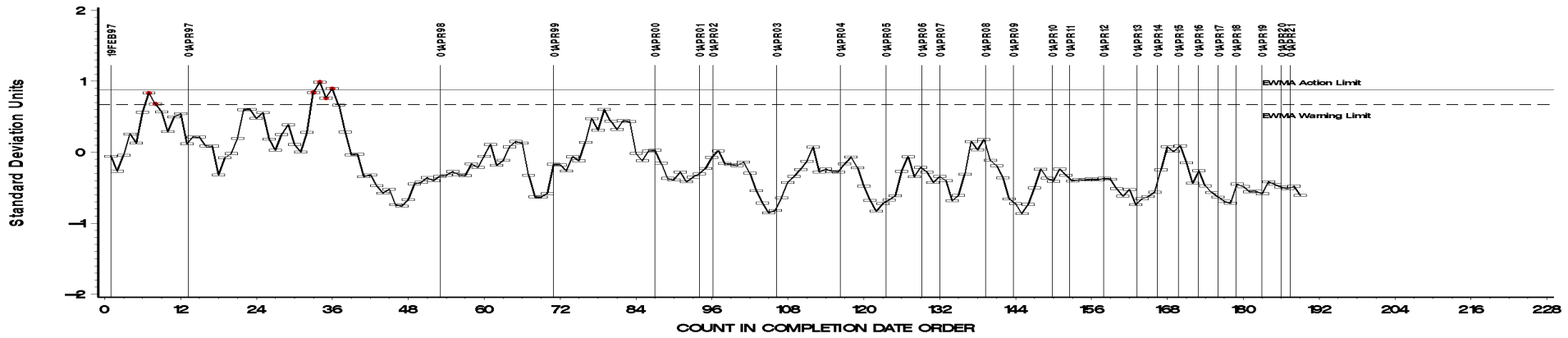


EOTOC

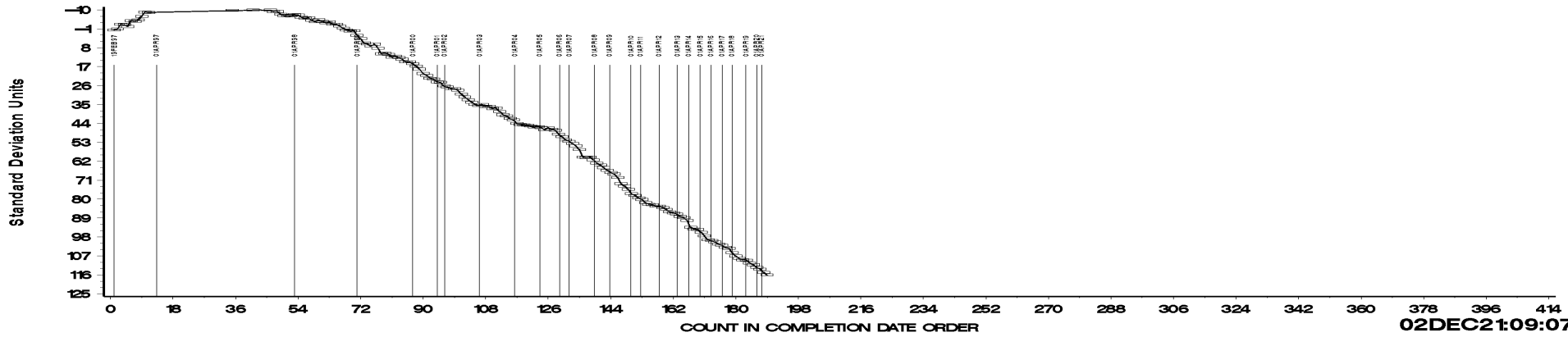
LTMS Severity Analysis



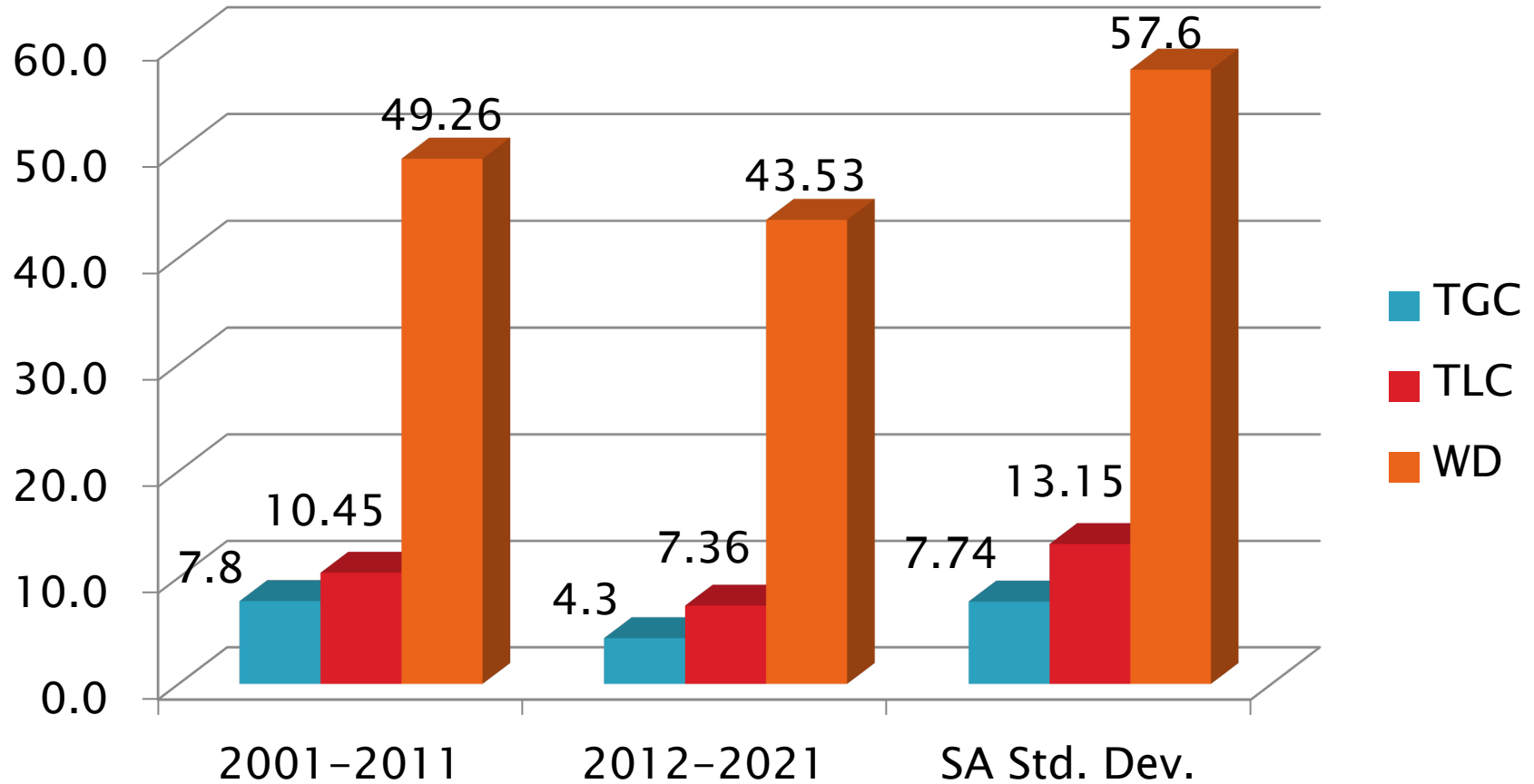
LTMS Precision Analysis



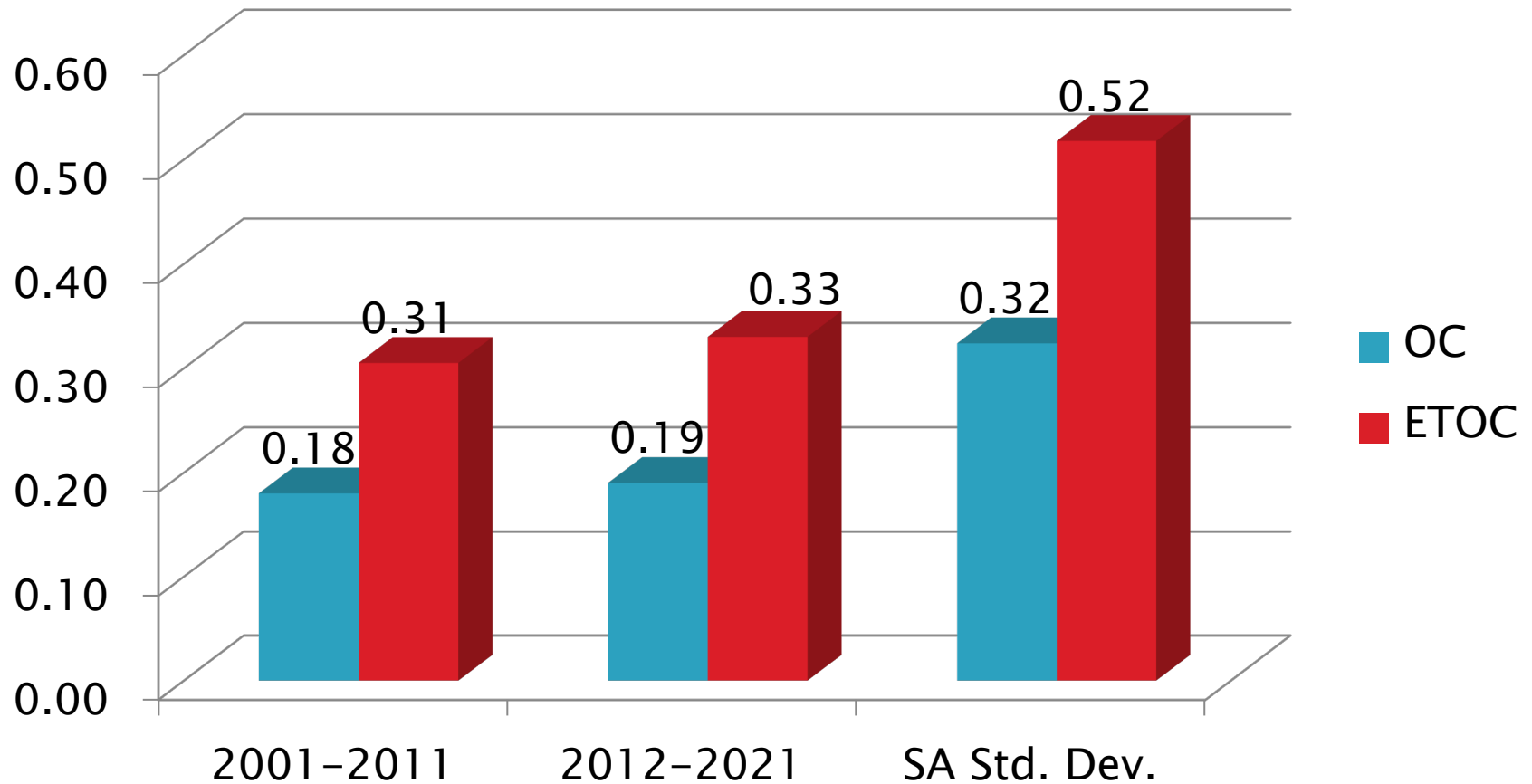
CUSUM Severity Analysis



1P Precision Estimates



1P Precision Estimates



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SCOTE 1 R

»» October 2021

1 R Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		0

1 R Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

1 R Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

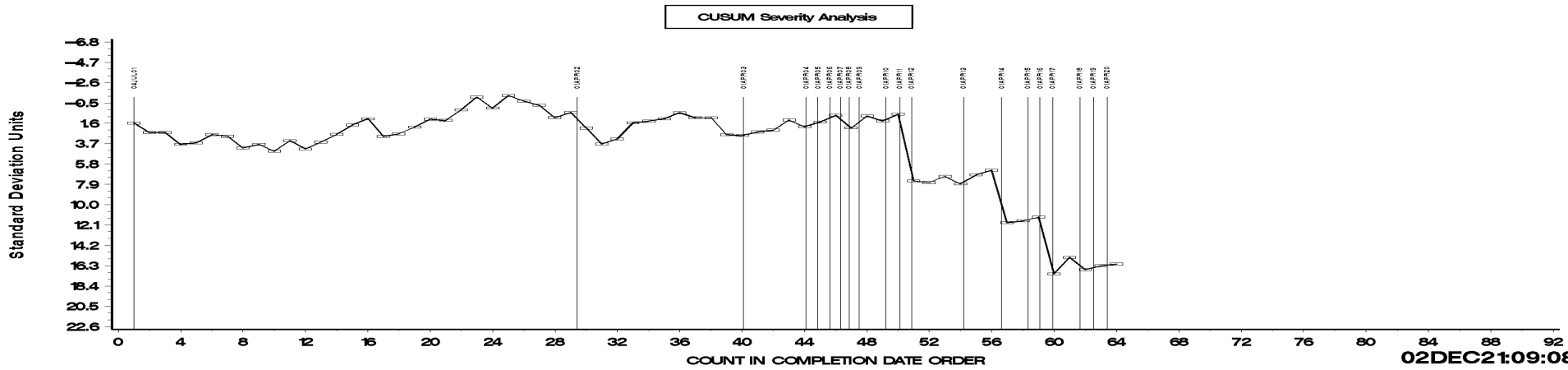
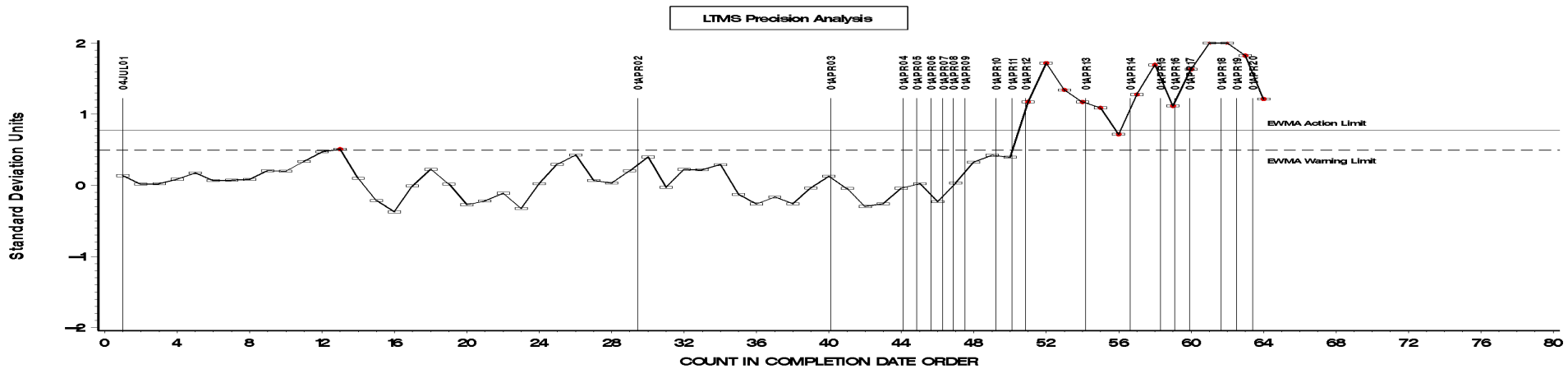
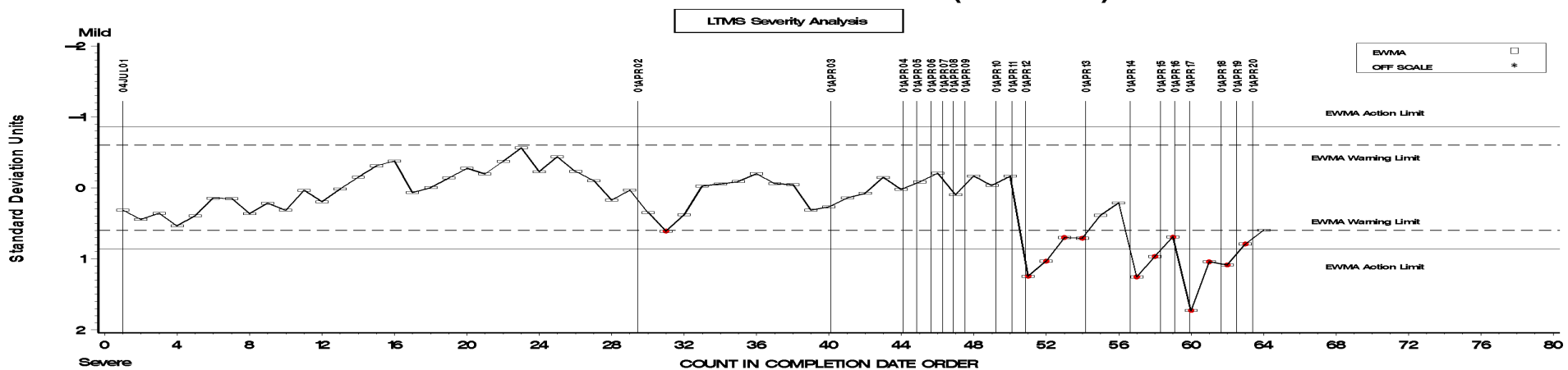
1 R Test Severity

- ▶ As no tests were run during this period no statement on test severity can be made.

CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA



FINAL WEIGHTED TOTAL DEMERITS (DEMERITS)

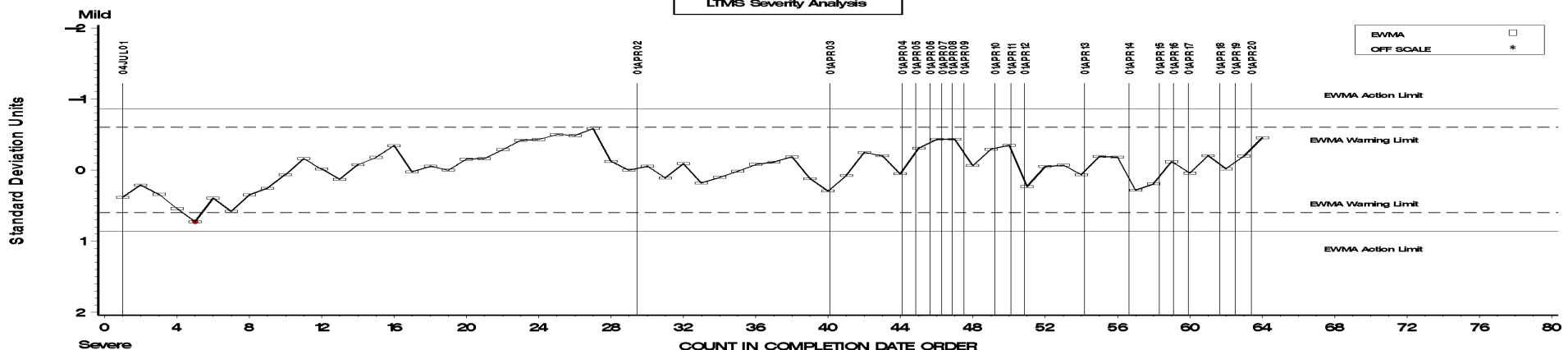


CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA

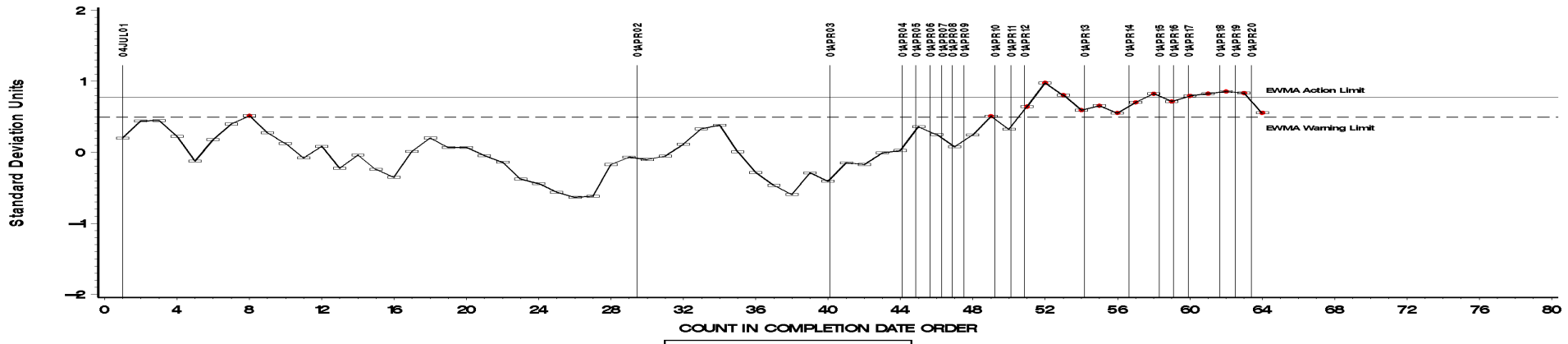


FINAL TOP GROOVE CARBON (DEMERITS)

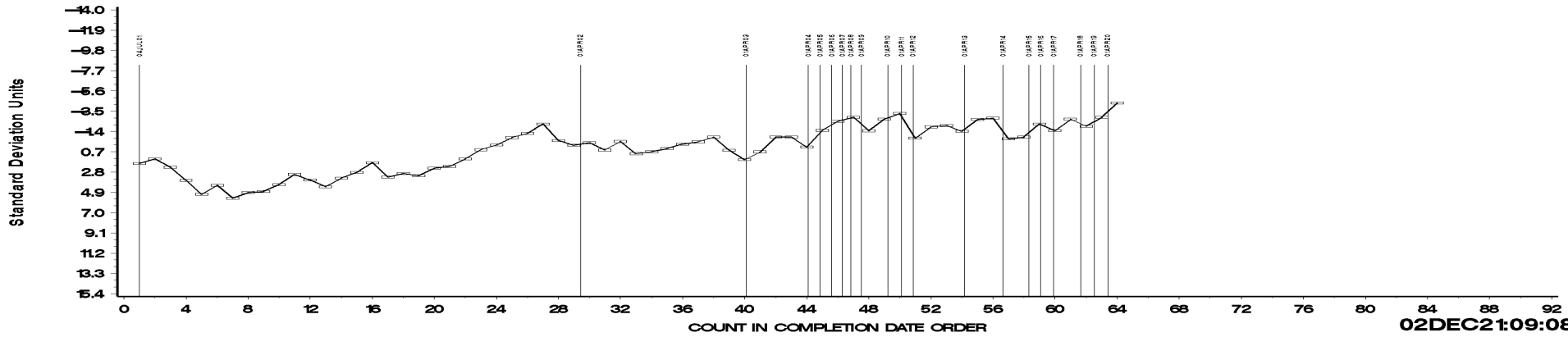
LTMS Severity Analysis



LTMS Precision Analysis



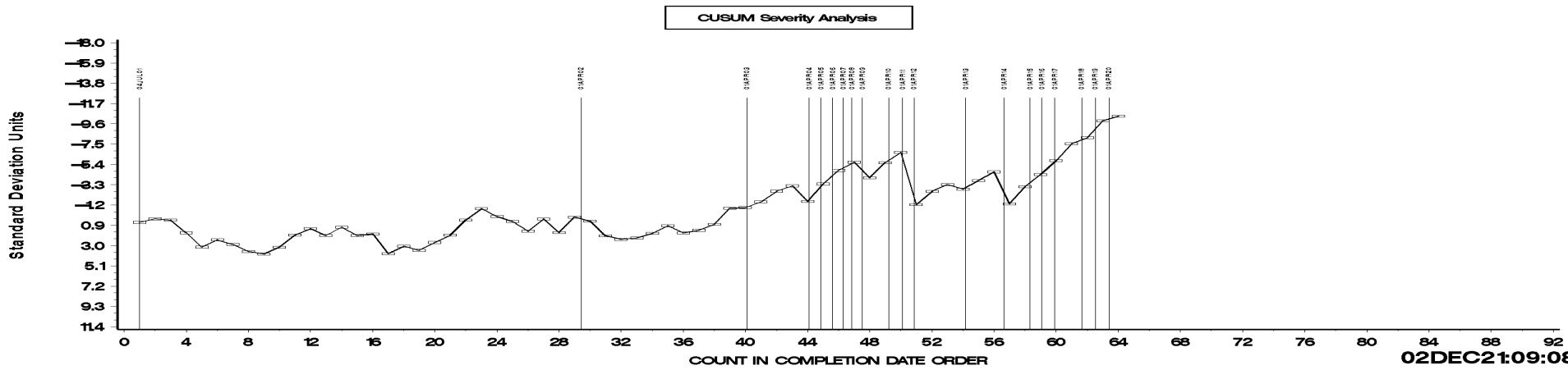
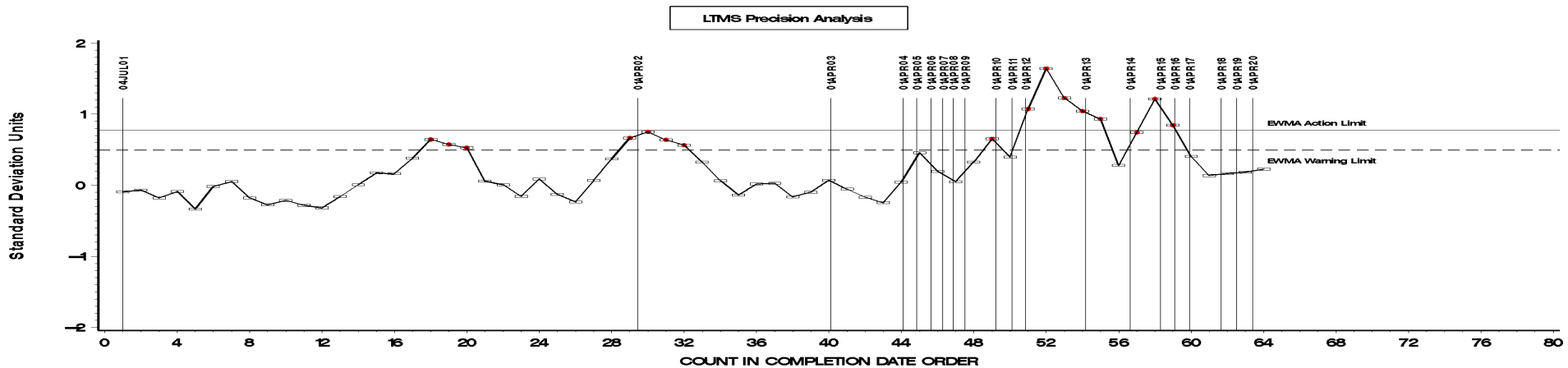
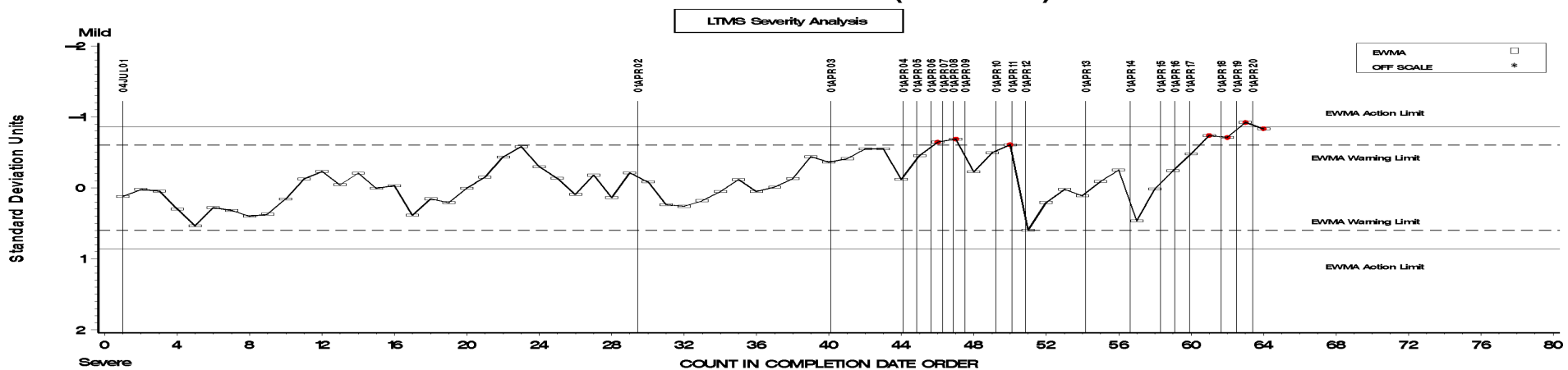
CUSUM Severity Analysis



CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA



FINAL TOP LAND CARBON (DEMERITS)

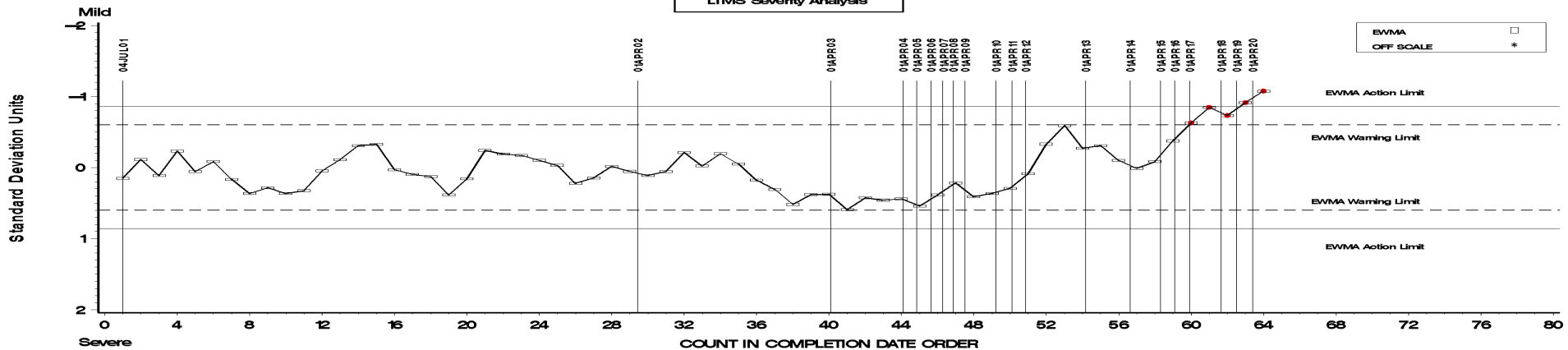


CATERPILLAR 1R INDUSTRY OPERATIONALLY VALID DATA

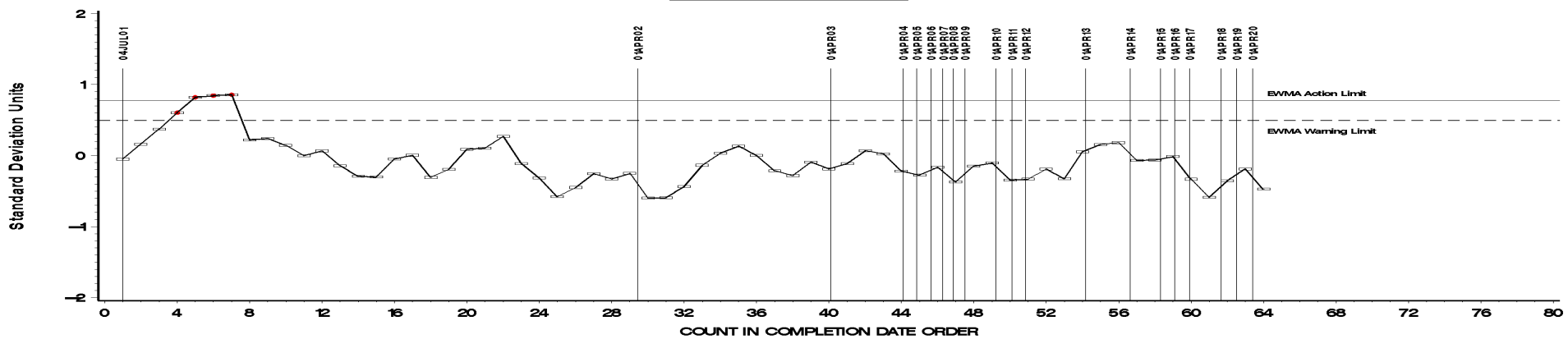


FINAL BOTOC

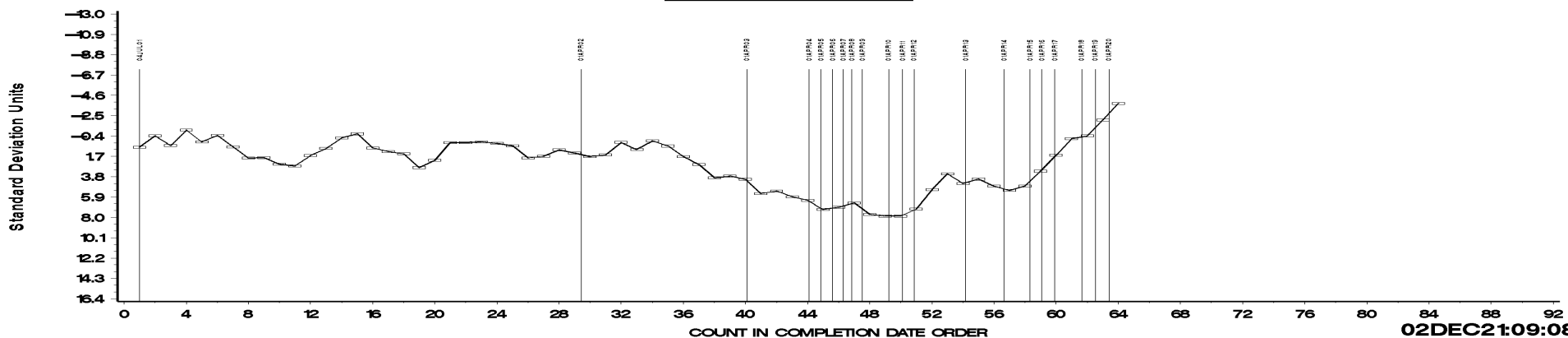
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

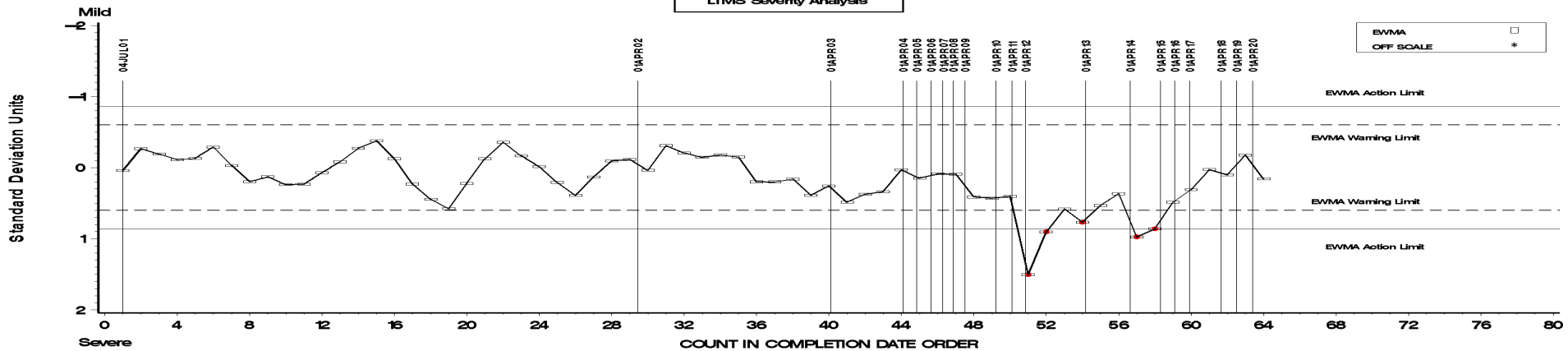


CATERPILLAR 1R INDUSTRY OPERATIONAL VALID DATA

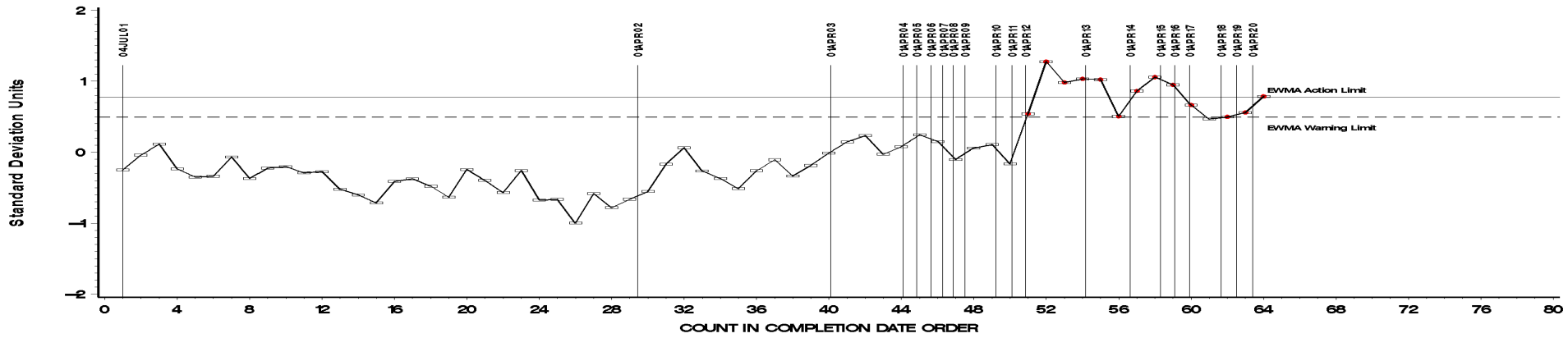


FINAL EOTOC (g/h)

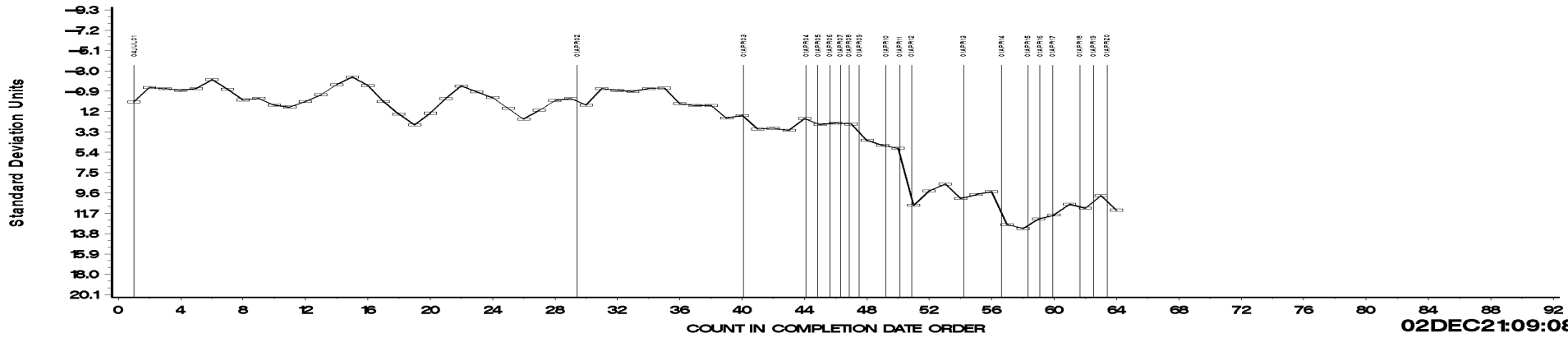
LTMS Severity Analysis



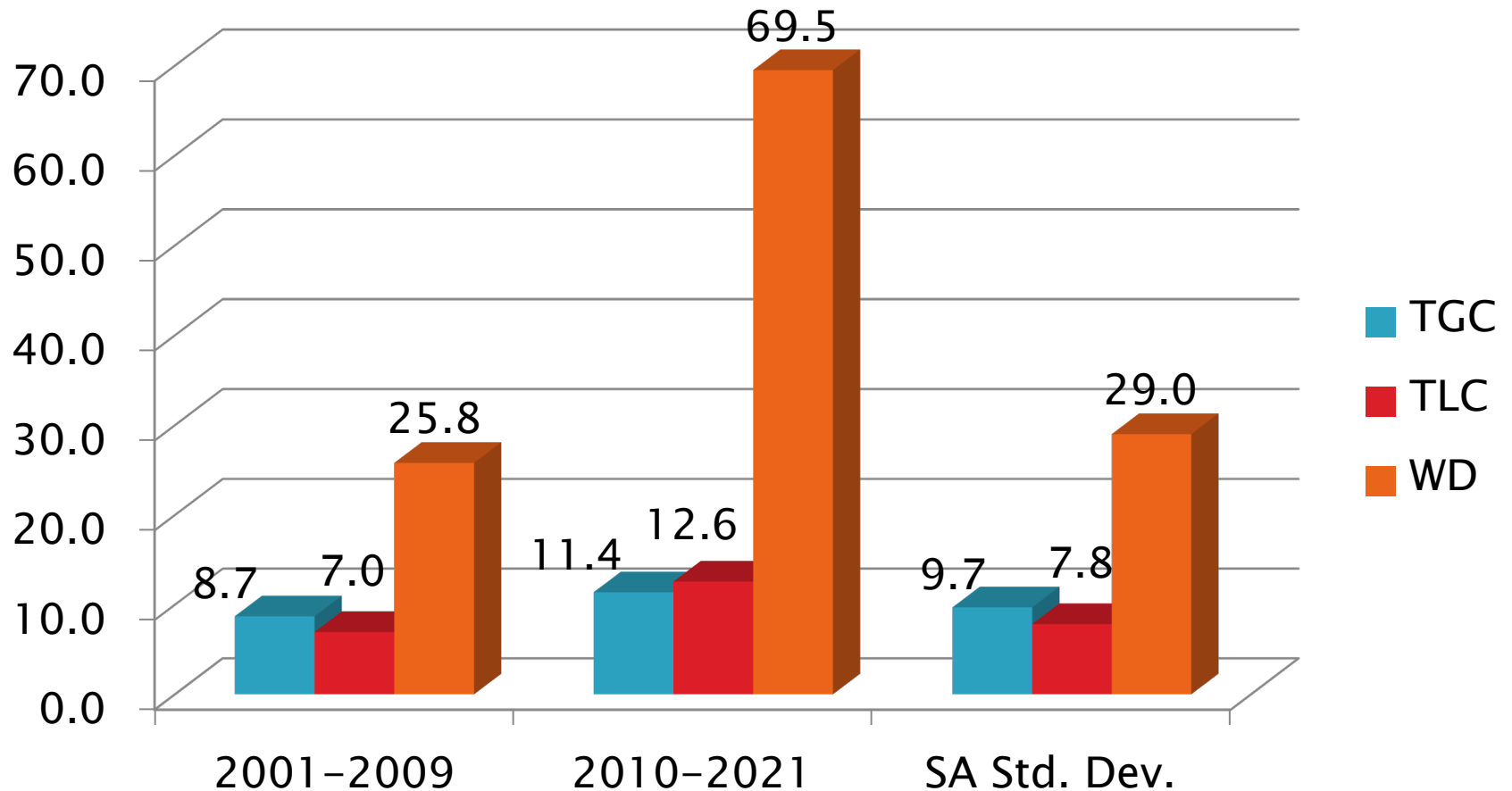
LTMS Precision Analysis



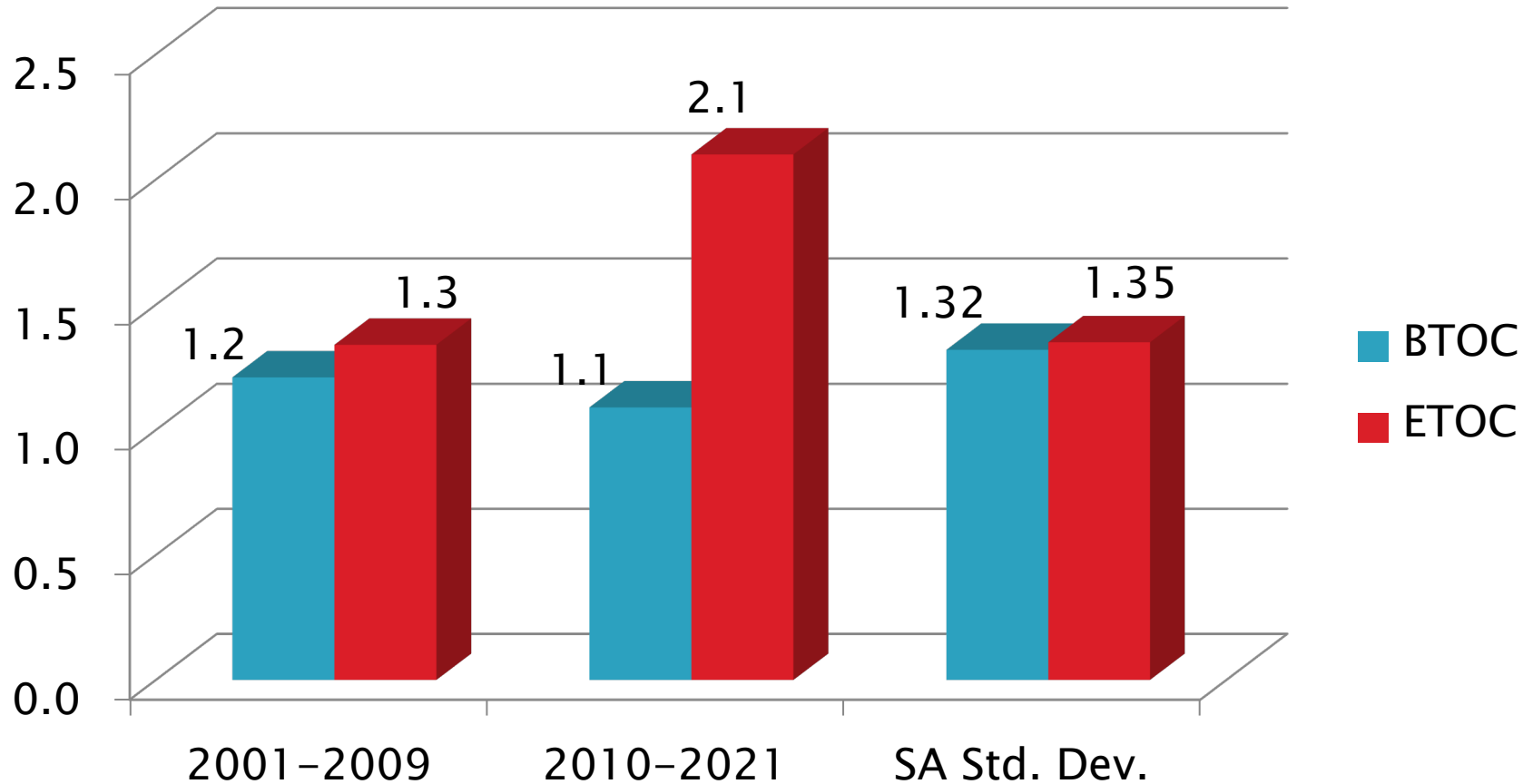
CUSUM Severity Analysis



1R Precision Estimates



1 R Precision Estimates



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CAT C13

»» October 2021

C13 Test Activity

Test Status	Validity Code	C13
Acceptable Calibration Test	AC	2
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		2

C13 Failed Tests

Failed Parameter	Number of Tests
No Failed Tests	0
Total	0

C13 Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

C13 Test Severity

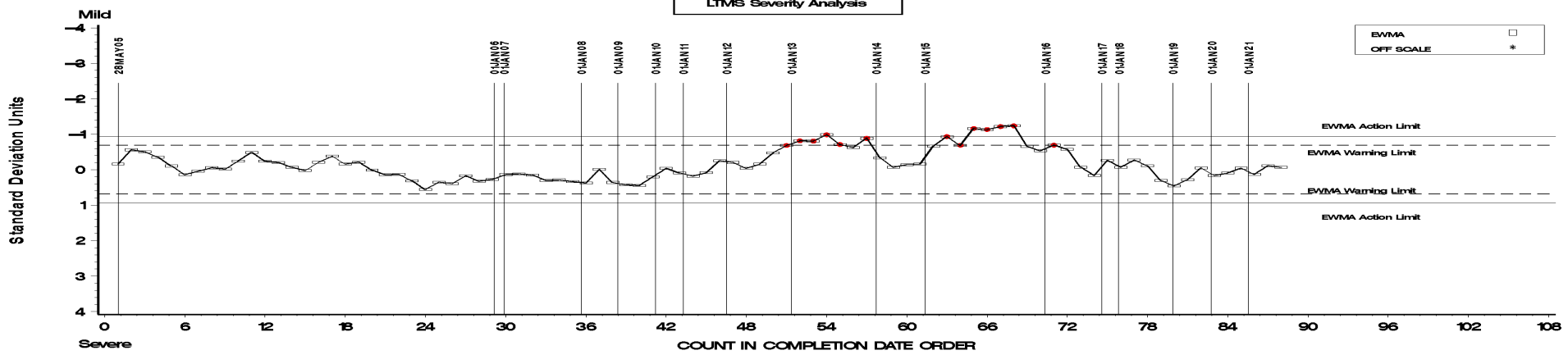
- ▶ R2TC, TGC, OC are in control
- ▶ TLC in severity warning alarm in the mild direction but very near action alarm

C13 INDUSTRY OPERATIONALLY VALID DATA

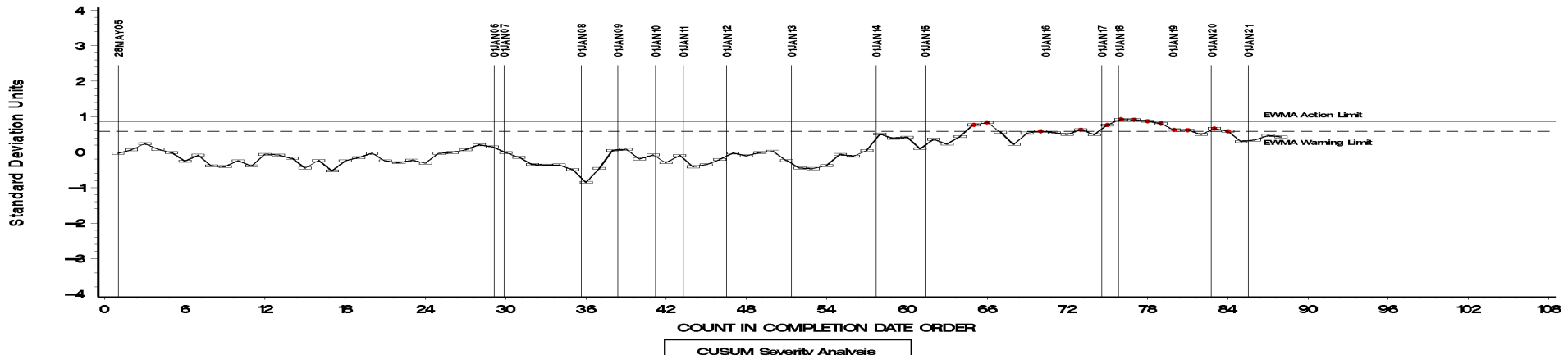


TOP GROOVE CARBON AVG — FINAL RESULT

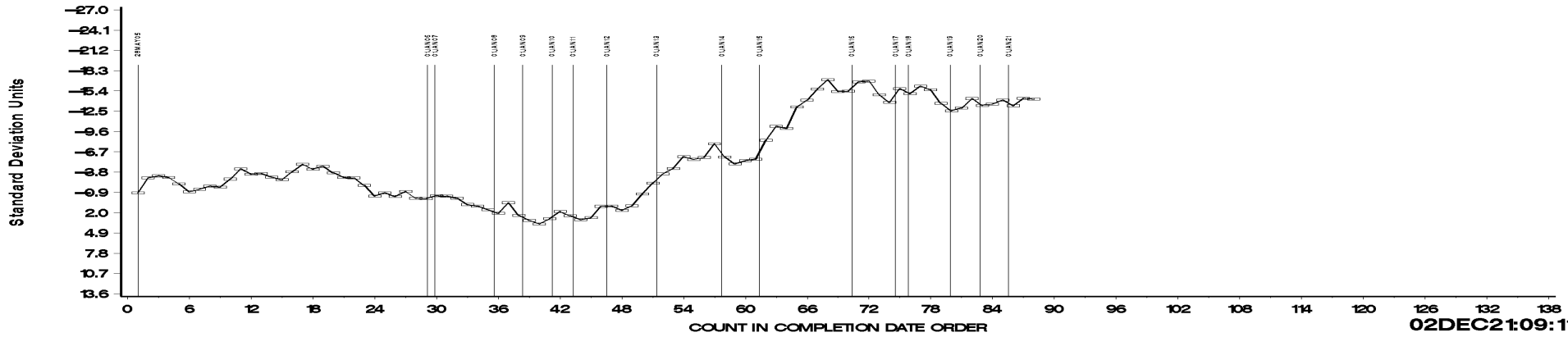
LTMS Severity Analysis



LTMS Precision Analysis



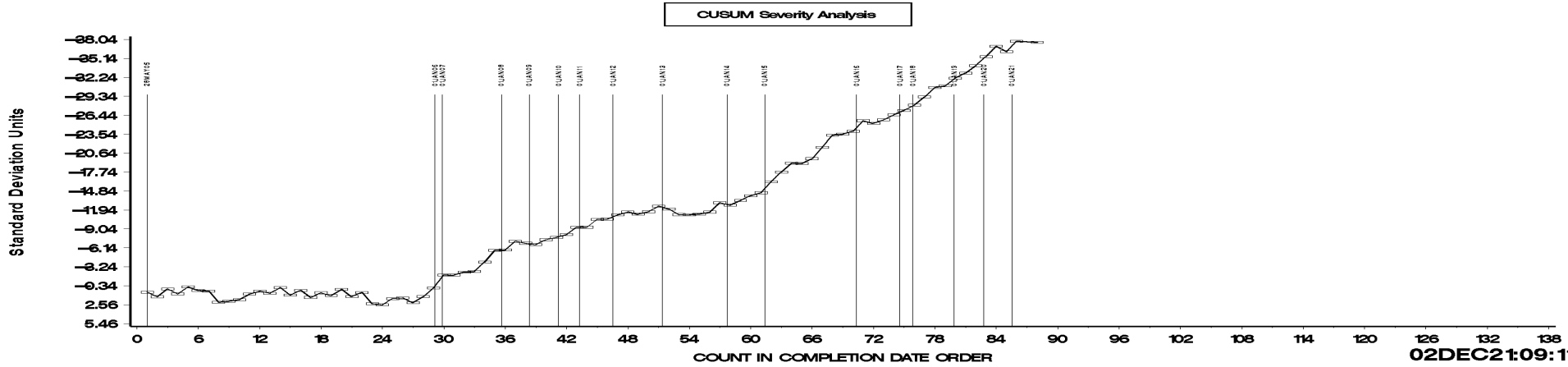
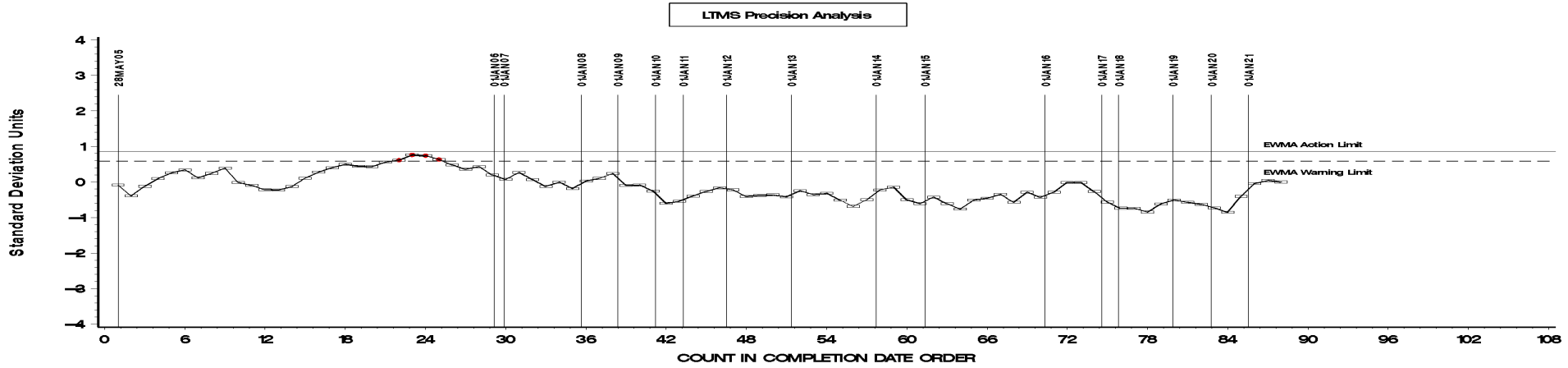
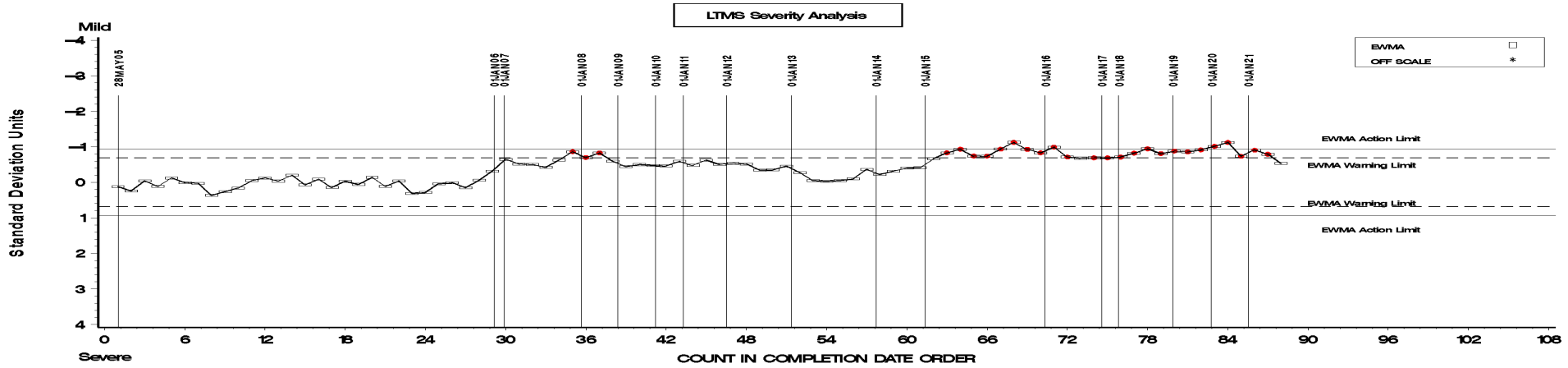
CUSUM Severity Analysis



C13 INDUSTRY OPERATIONALLY VALID DATA



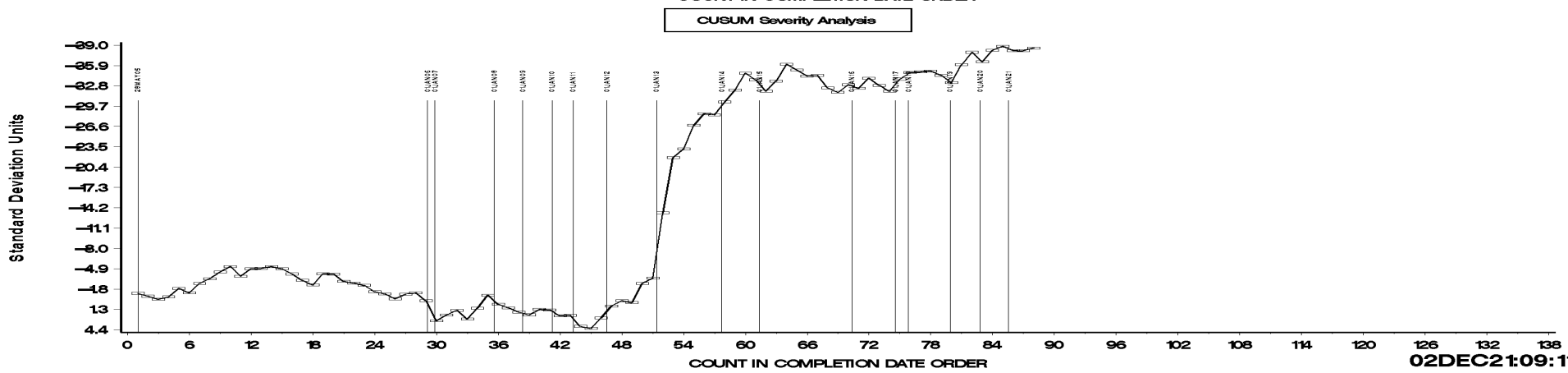
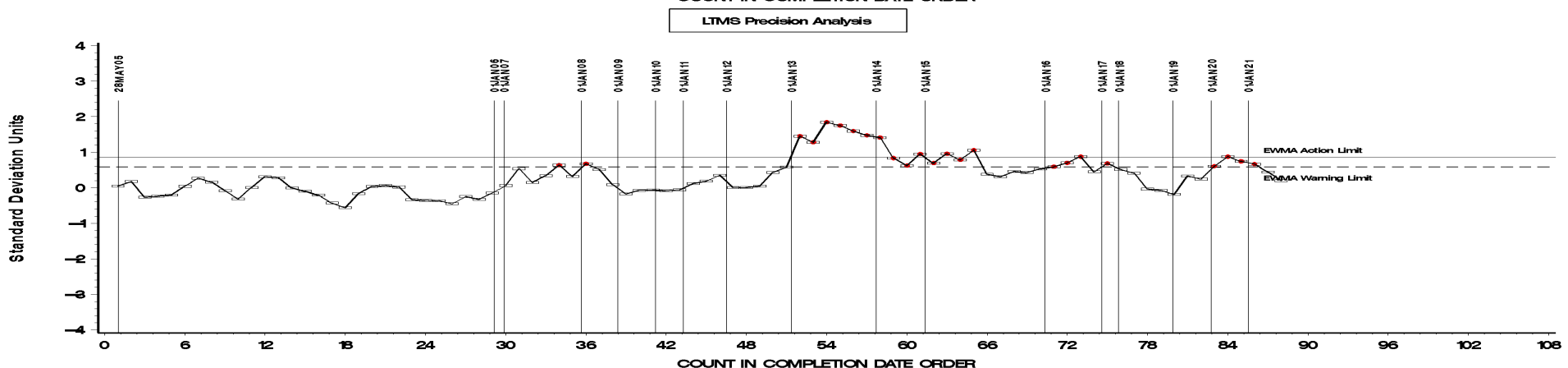
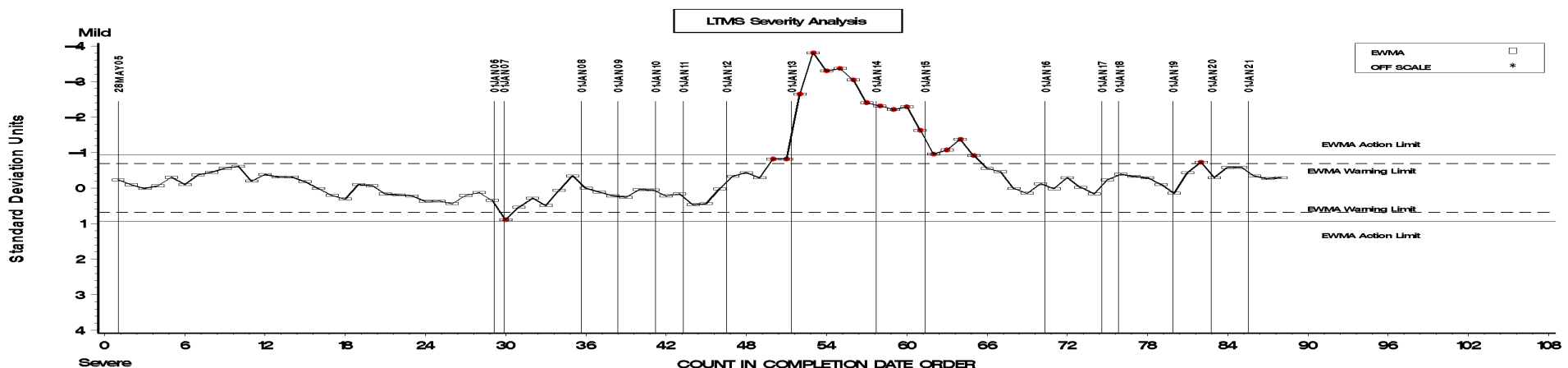
TOP LAND CARBON AVG. — FINAL RESULT



C13 INDUSTRY OPERATIONALLY VALID DATA

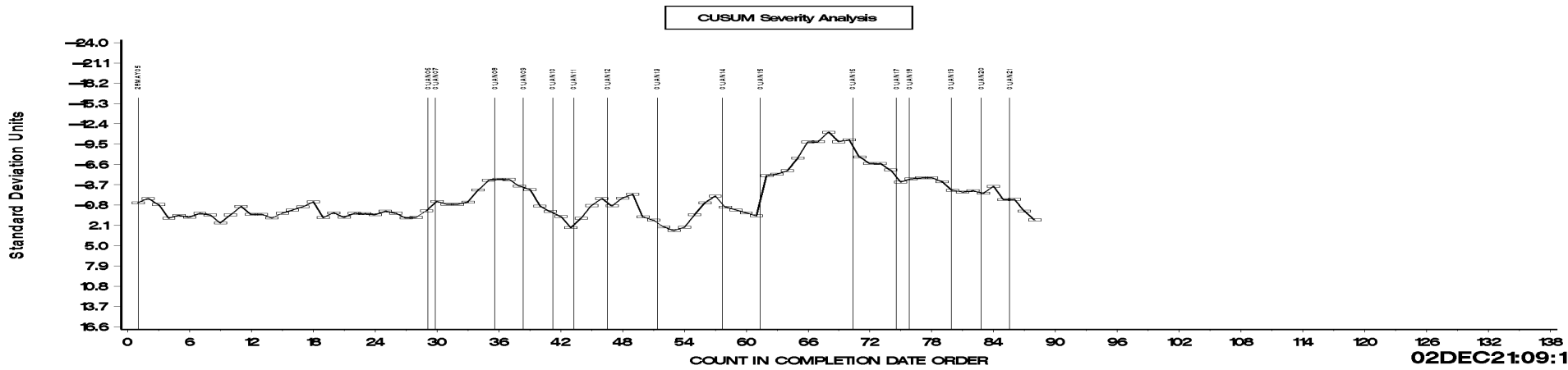
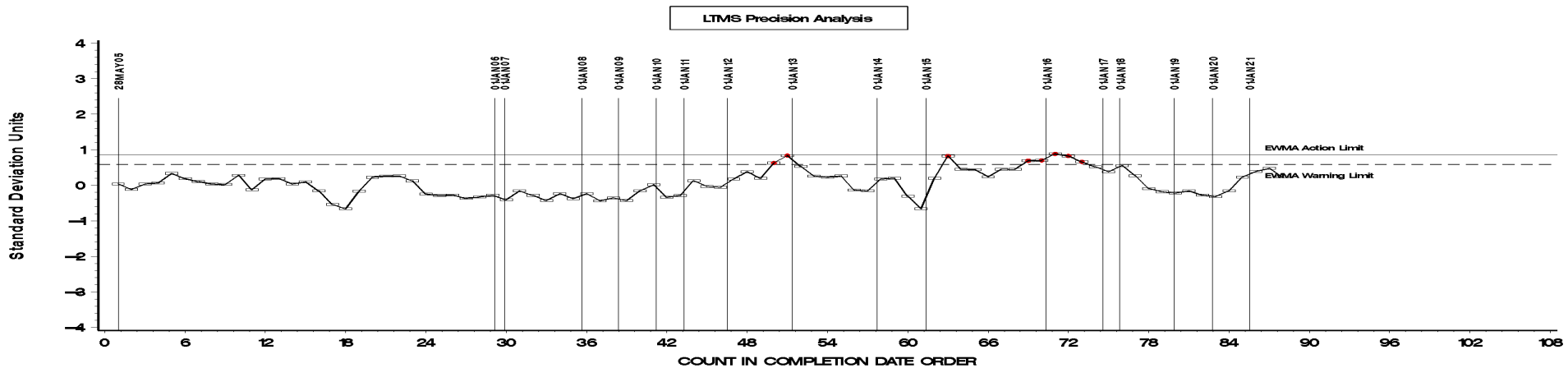
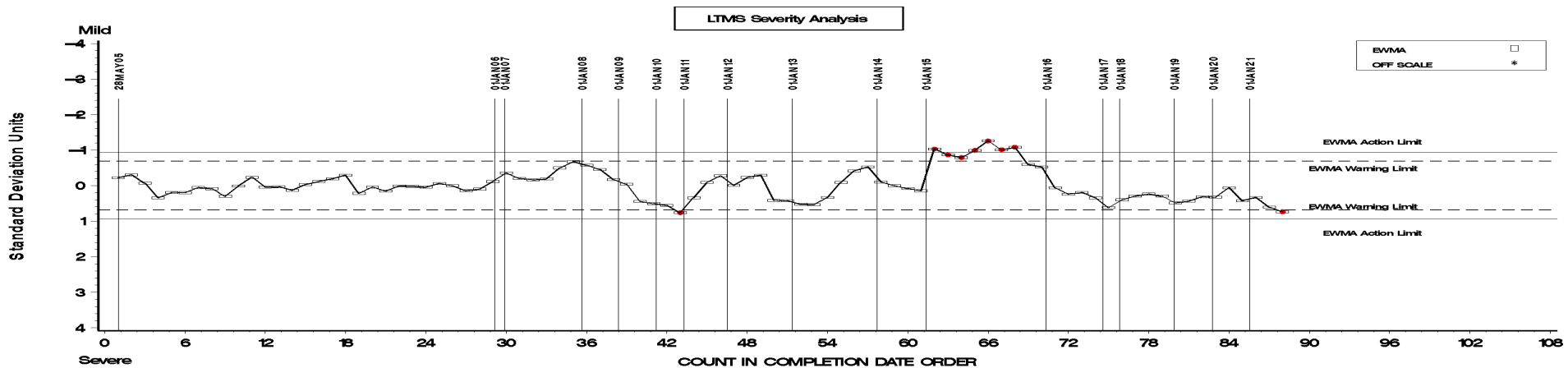


2ND RING TOP CARBON AVG. — FINAL RESULT

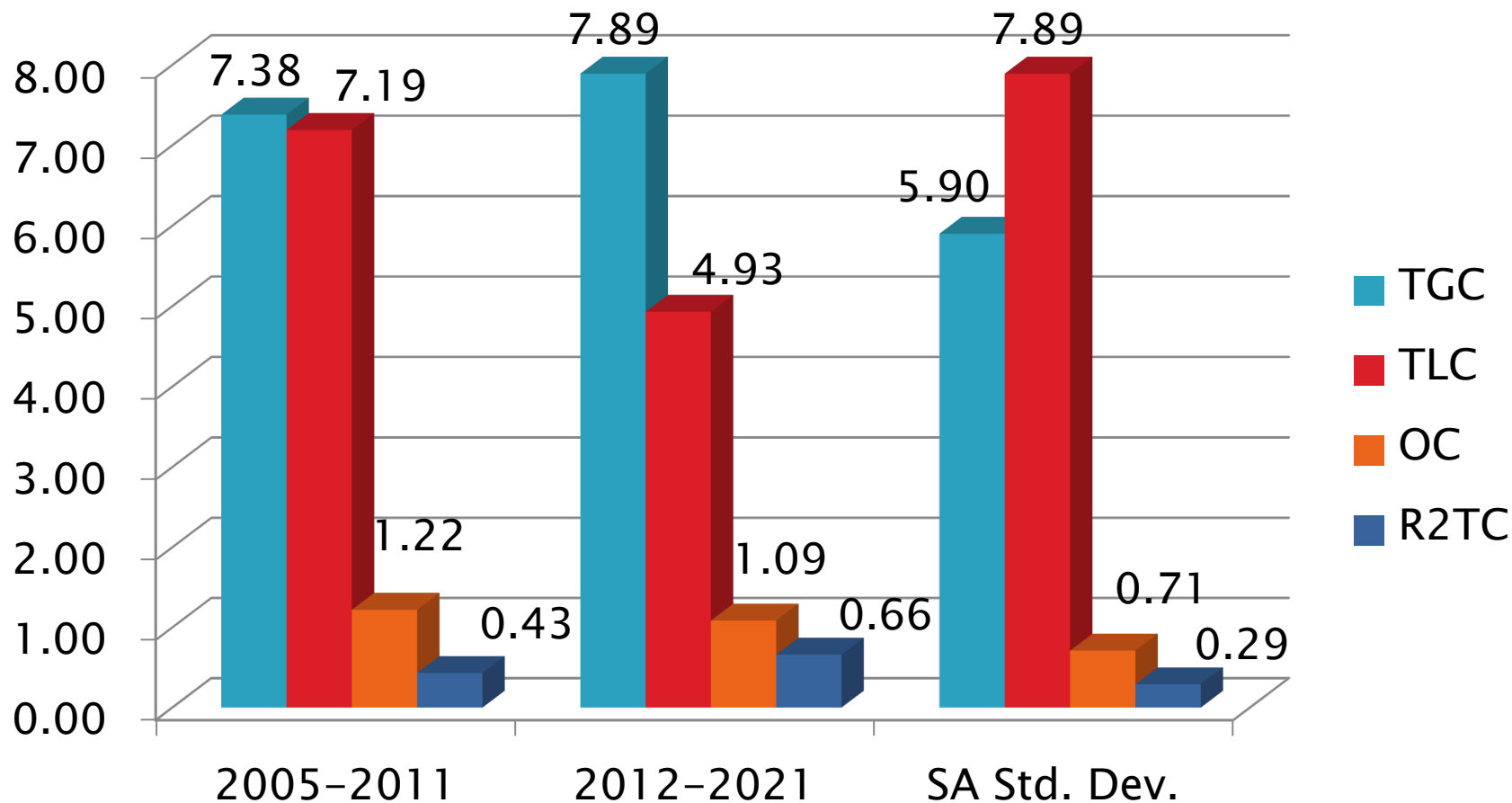


C13 INDUSTRY OPERATIONALLY VALID DATA

OIL CONS. DELTA — FINAL RESULT



C13 Precision Estimates



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C13 Oil Aeration (COAT)

»» October 2021

COAT Test Activity

Test Status	Validity Code	COAT
Acceptable Calibration Test	AC	2
Failed Calibration Test	OC	1
Operationally Invalid	LC	0
Aborted	XC	0
Total		3

COAT Failed Tests

Failed Parameter	Number of Tests
Average oil aeration severe	1
Total	1

COAT Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

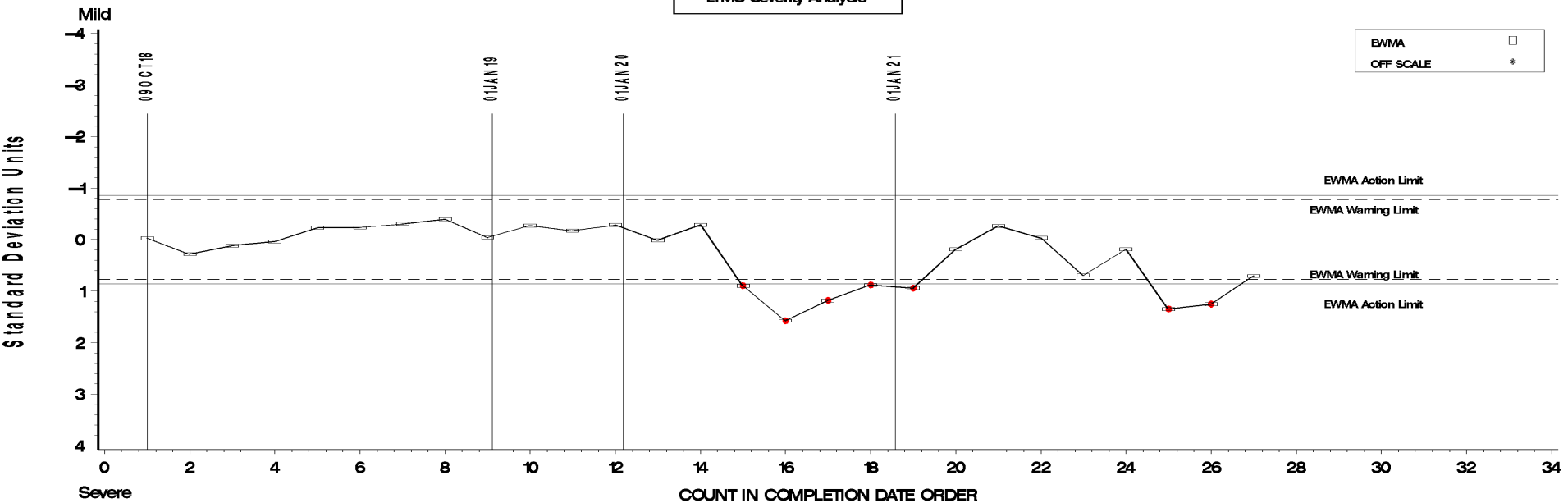
*Invalid and aborted tests

COAT Test Severity

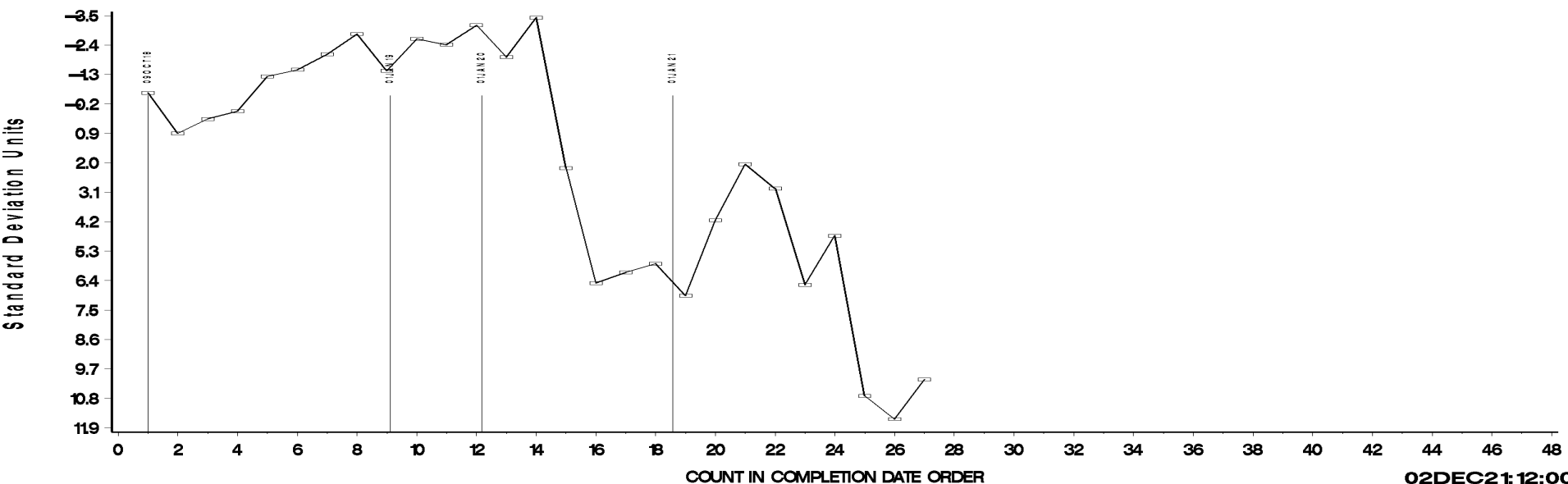
- ▶ AAVE is in control

CORRECTED AVERAGE OIL AERATION OVER TEST HOURS 40 —50

LTMS Severity Analysis

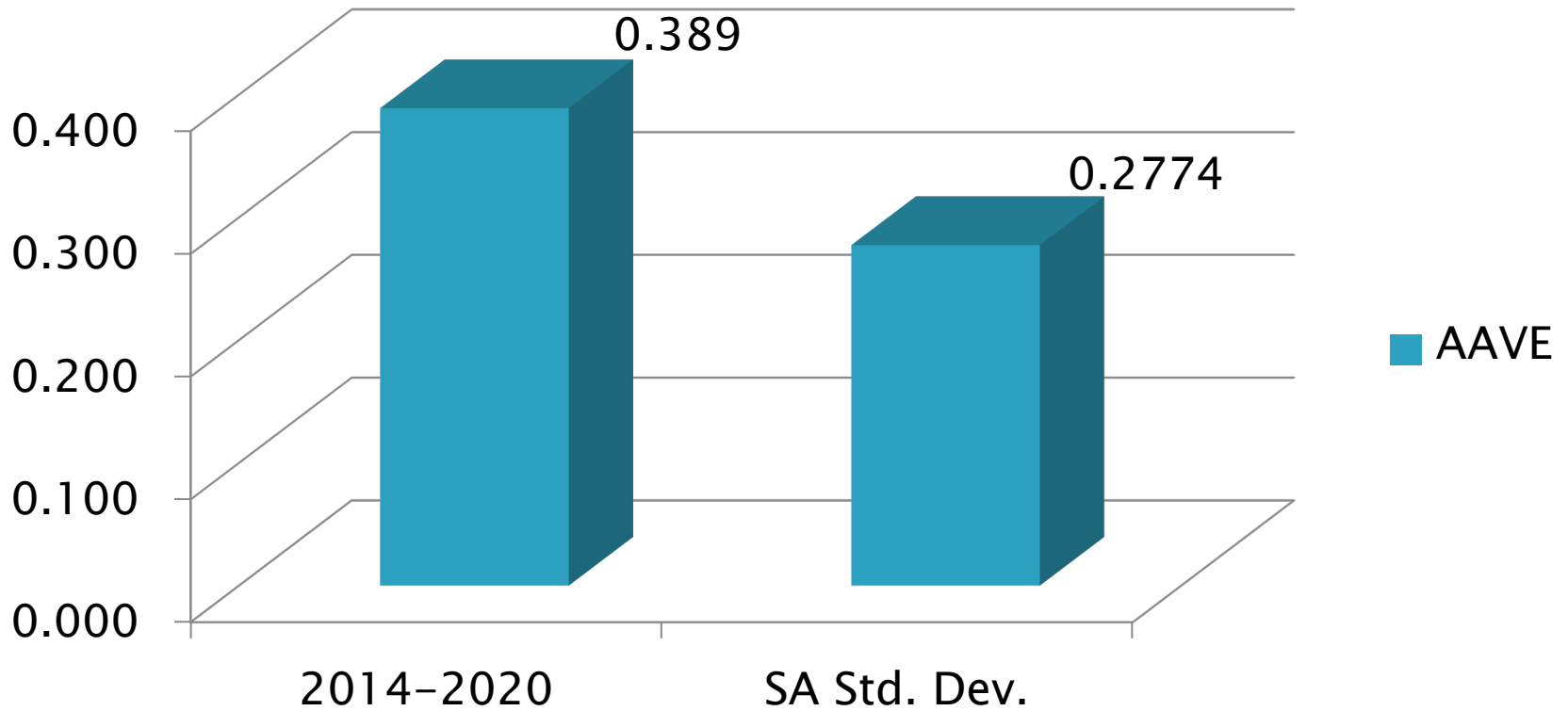


CUSUM Severity Analysis



COAT Precision Estimates

AAVE



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Daimler DD13 Scuffing Test

»» October 2021

DD13 Test Activity

Test Status	Validity Code	COAT
Acceptable Calibration Test	AC	1
Failed Calibration Test	OC	1
Operationally Invalid	LC	1
Aborted	XC	0
Total		3

DD13 Failed Tests

Failed Parameter	Number of Tests
Hours to scuff severe	1
Total	1

DD13 Lost Tests*

Status	Cause	#
Invalid	Scuffed before 30 hours	1
Aborted	No aborted tests	0
Total		1

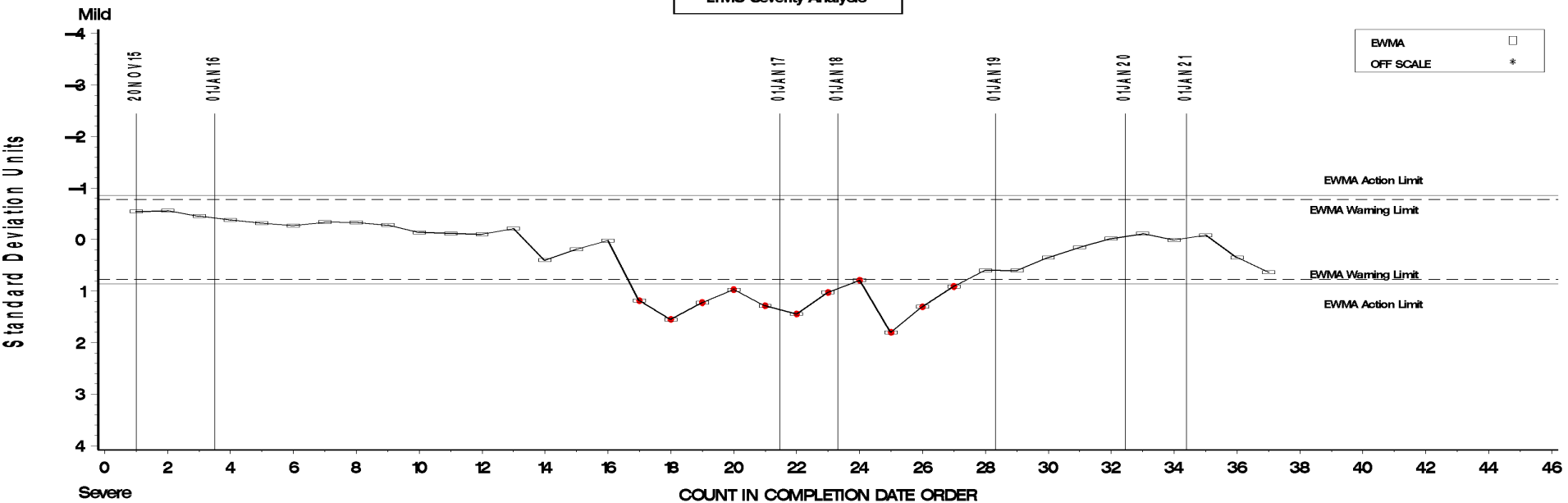
*Invalid and aborted tests

DD13 Test Severity

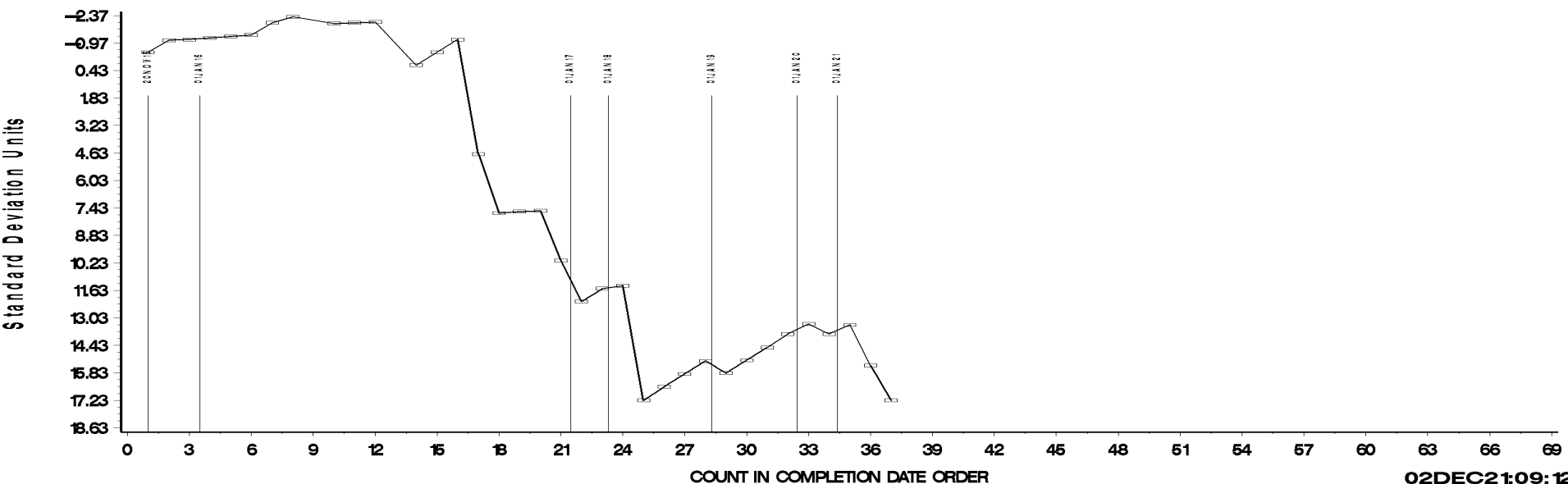
- ▶ HRS2 is in control.

FNL. ORIG. UNIT HOURS TO SCUFF

LTMS Severity Analysis

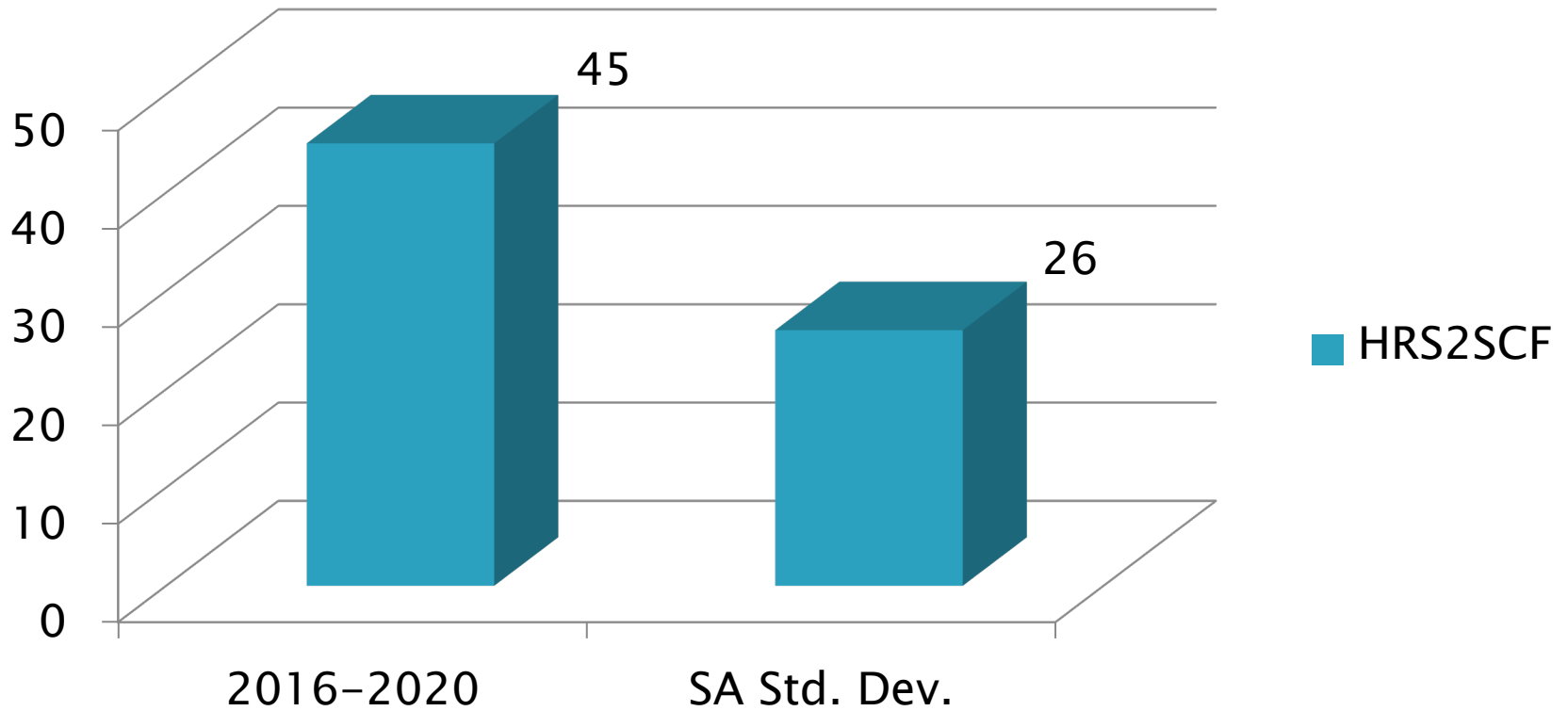


CUSUM Severity Analysis



DD13 Precision Estimates

HRS2SCF



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Cummins ISB

»» October 2021

ISB Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	4
Failed Calibration Test	OC	2
Operationally Invalid	LC	0
Aborted	XC	0
Total		6

ISB Failed Tests

Failed Parameter	Number of Tests
ACSW Level 3 Ei alarm	1
ACSW and ATWL Level 3 Ei alarms	1
Total	2

ISB Lost Tests*

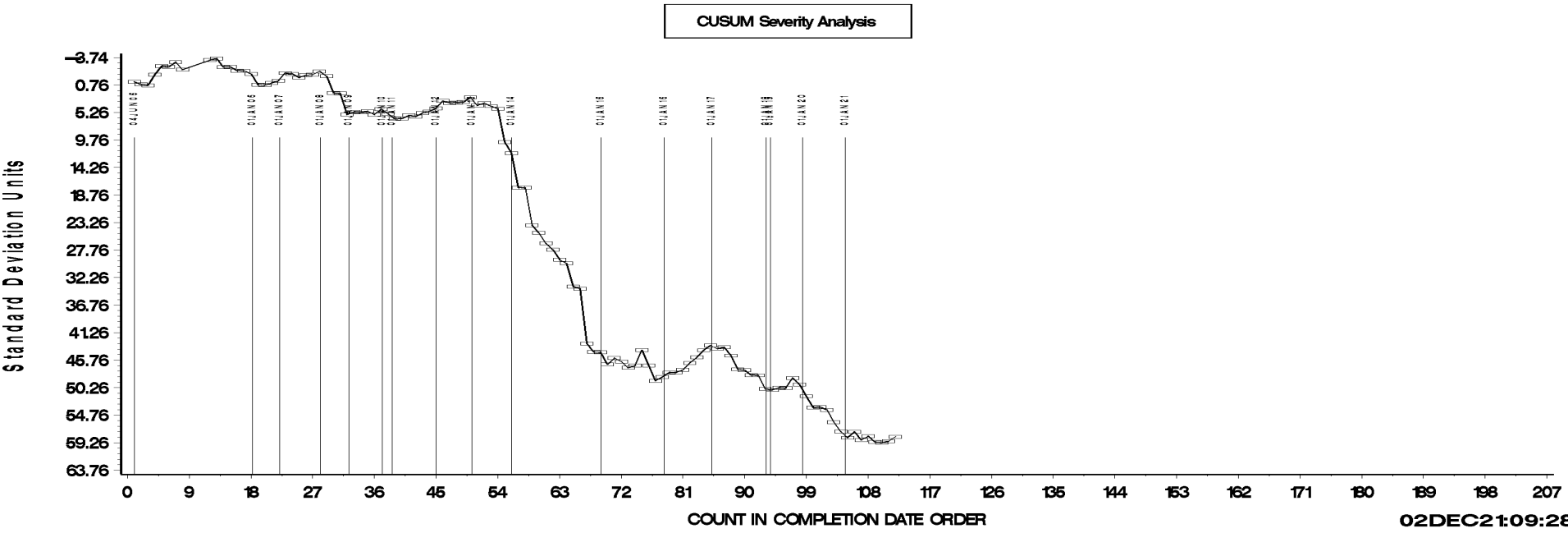
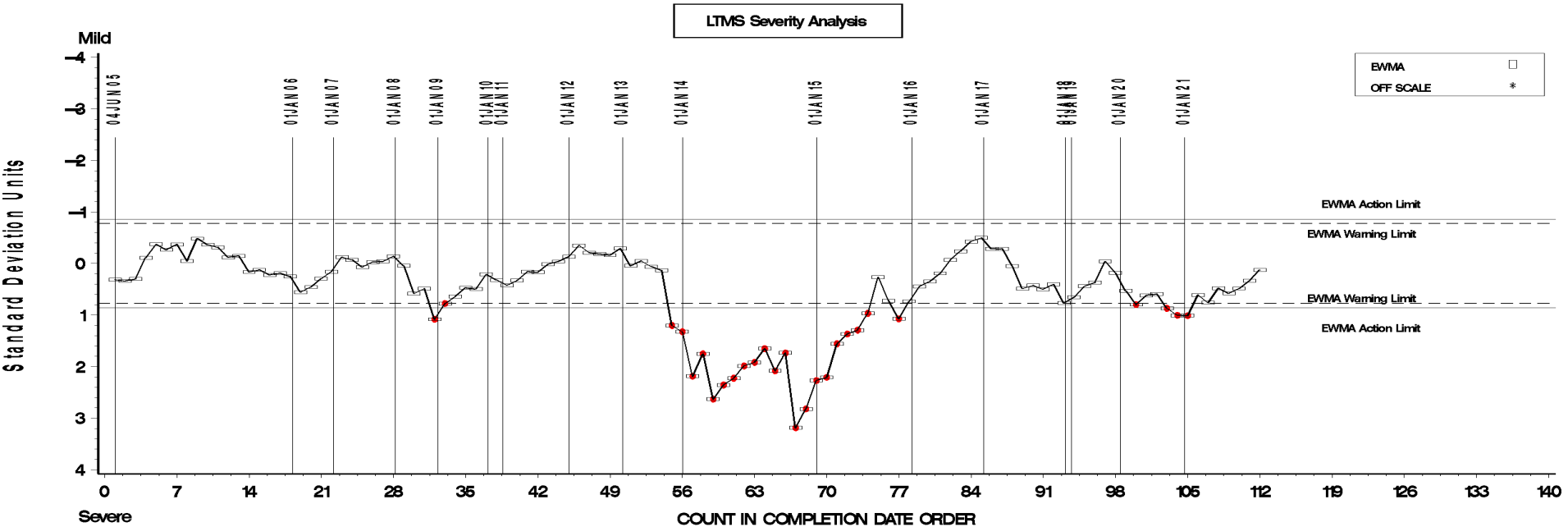
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

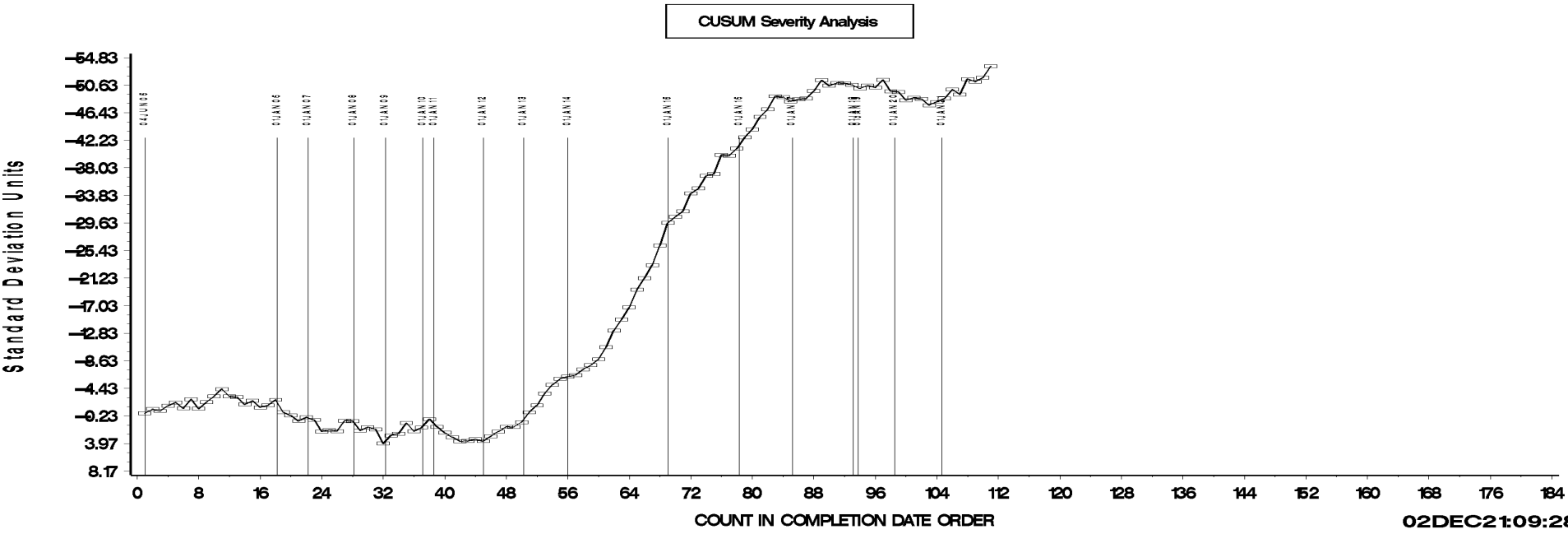
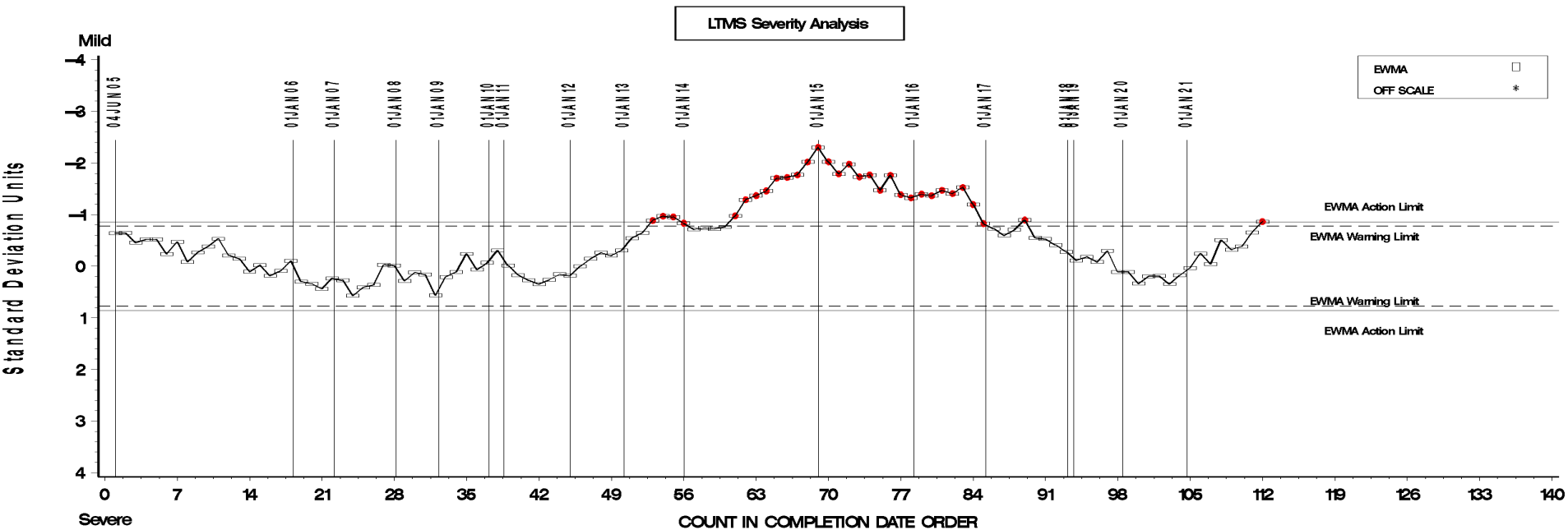
ISB Test Severity

- ▶ ATWL in level 2 Zi alarm
- ▶ ACSW is in control.

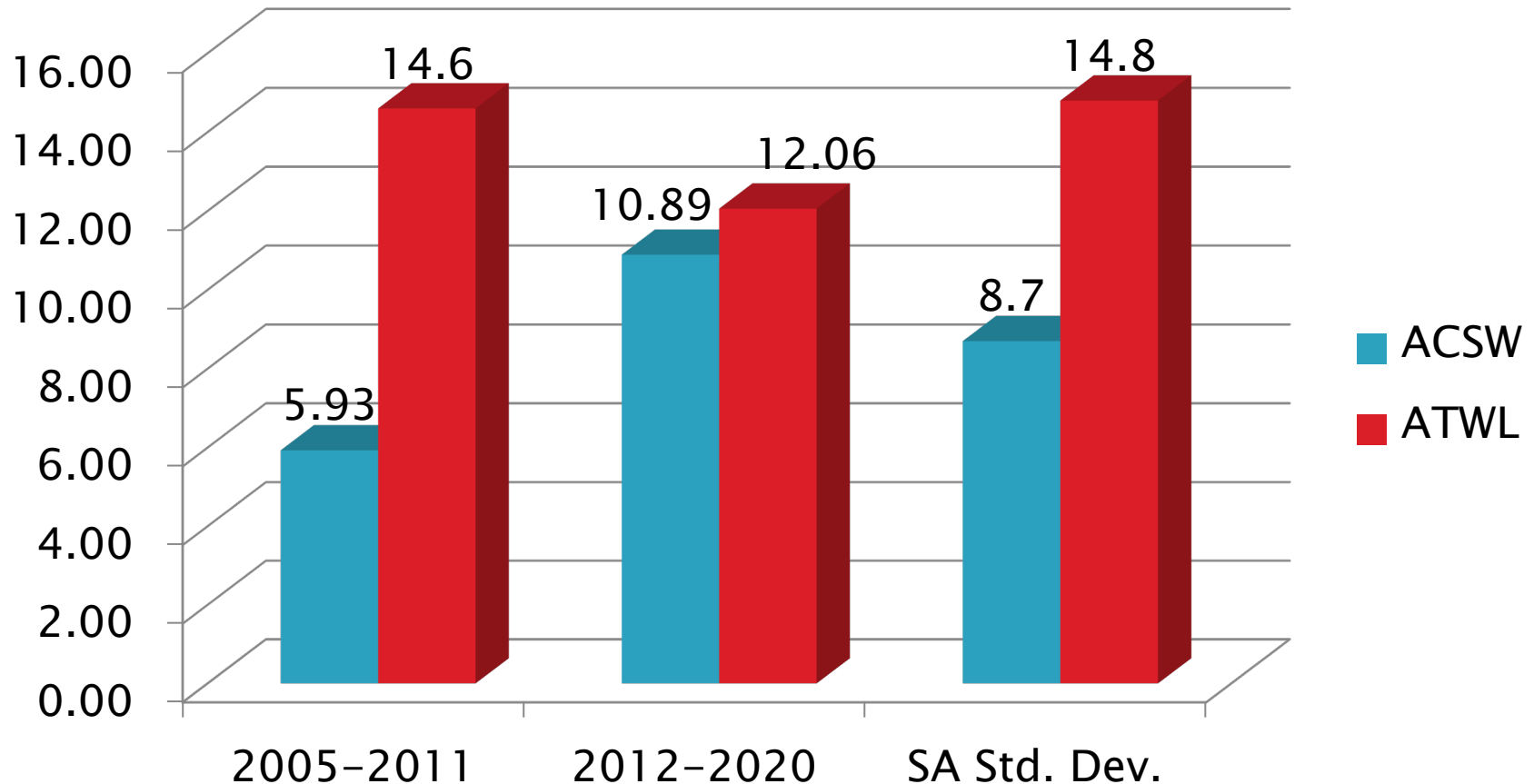
AVERAGE CAMSHAFT WEAR



AVERAGE TAPPET WEIGHT LOSS



ISB Precision Estimates



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Cummins ISM

»» October 2021

ISM Test Activity

Test Status	Validity Code	#
Acceptable Calibration	AC	1
Failed Calibration	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		1

ISM Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

ISM Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

ISM Test Severity

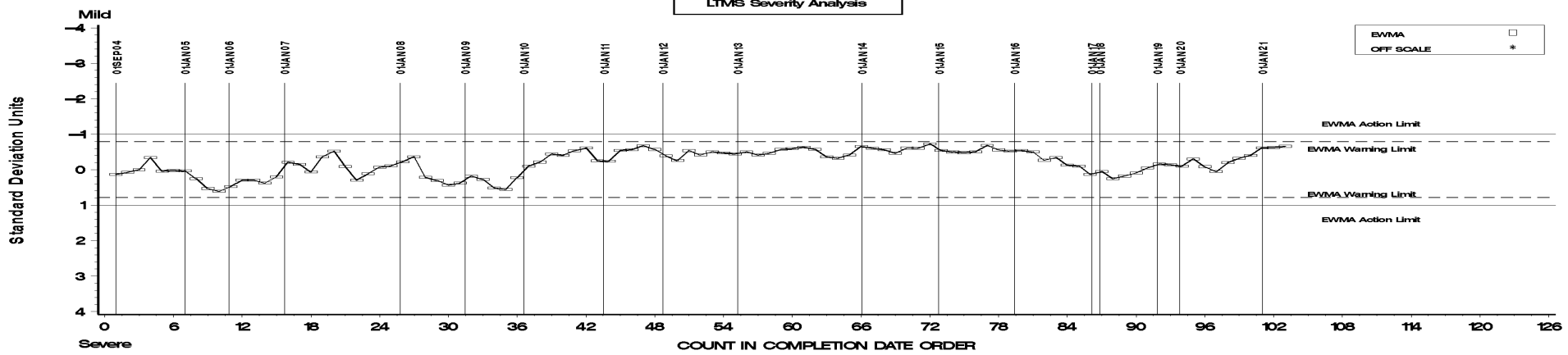
- ▶ CWL and FPD are in control.
- ▶ ASR and IAS are in a precision warning alarm.
- ▶ IAS is in a severity action alarm in the severe direction.

ISM INDUSTRY OPERATIONALLY VALID DATA

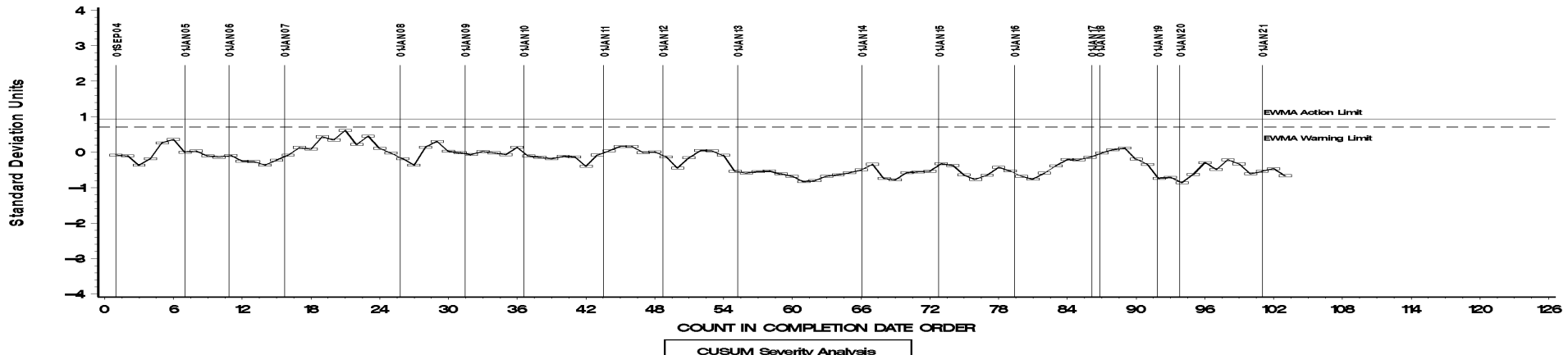


CROSSHEAD WEIGHT LOSS ADJUSTED TO 3.9 % SOOT

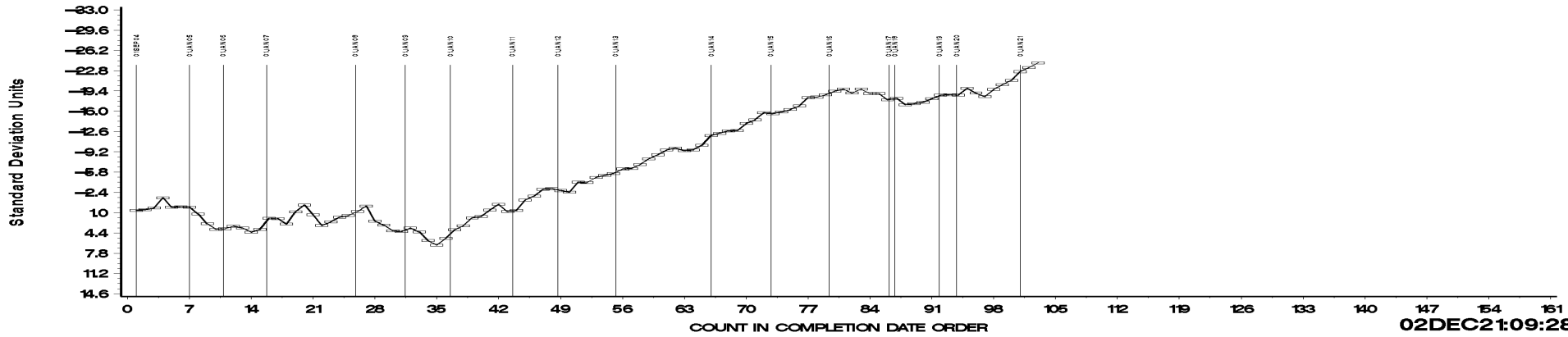
LTMS Severity Analysis



LTMS Precision Analysis

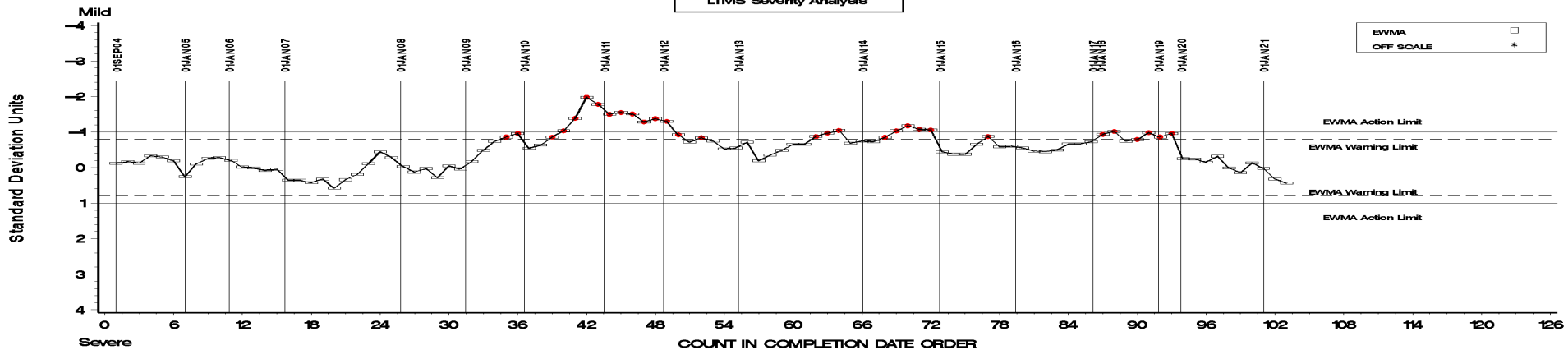


CUSUM Severity Analysis

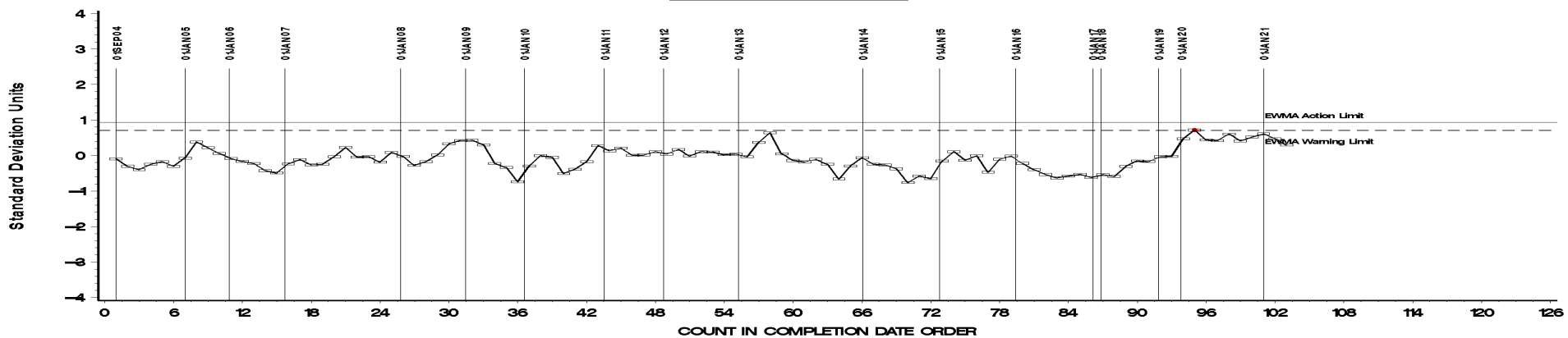


FILTER PLUGGING DELTA P

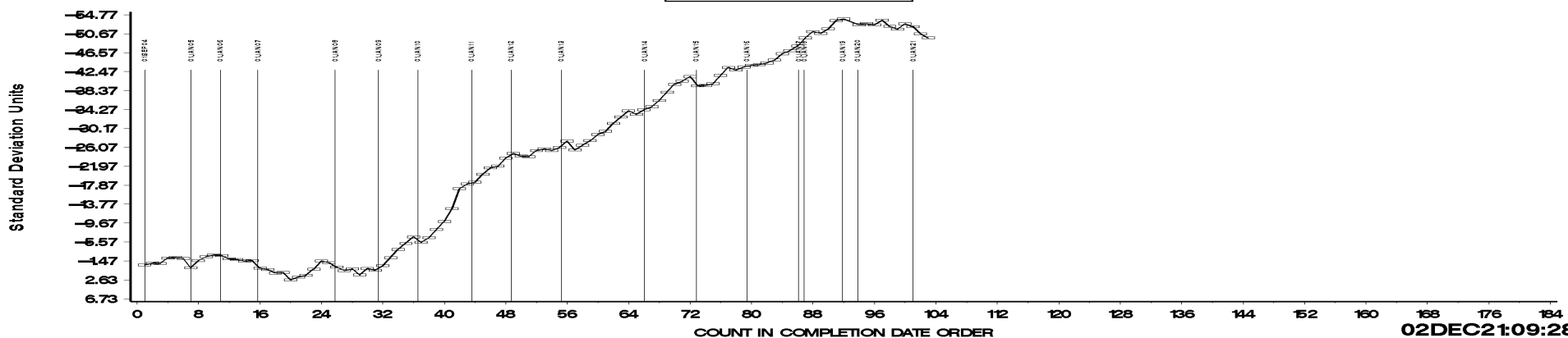
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis



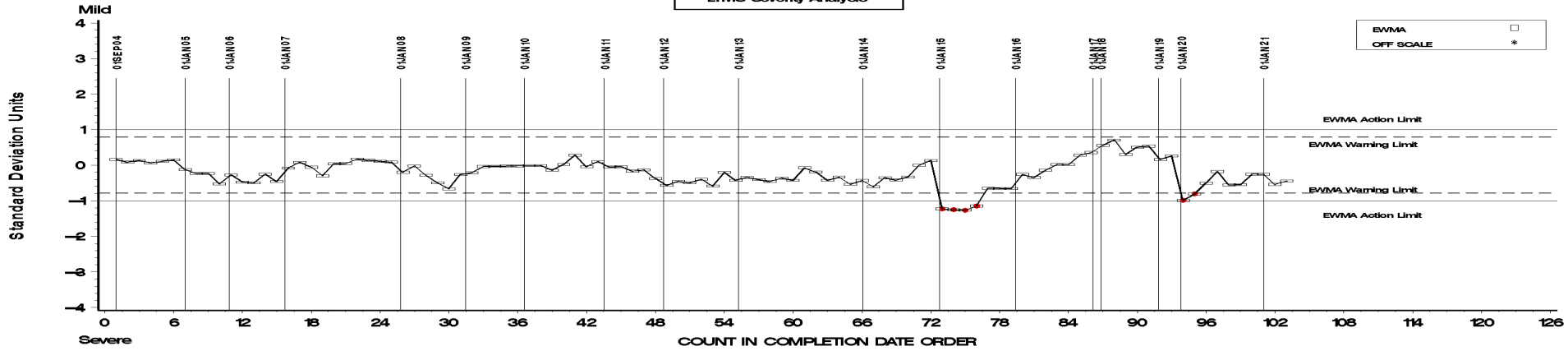
ISM INDUSTRY OPERATIONALLY VALID DATA



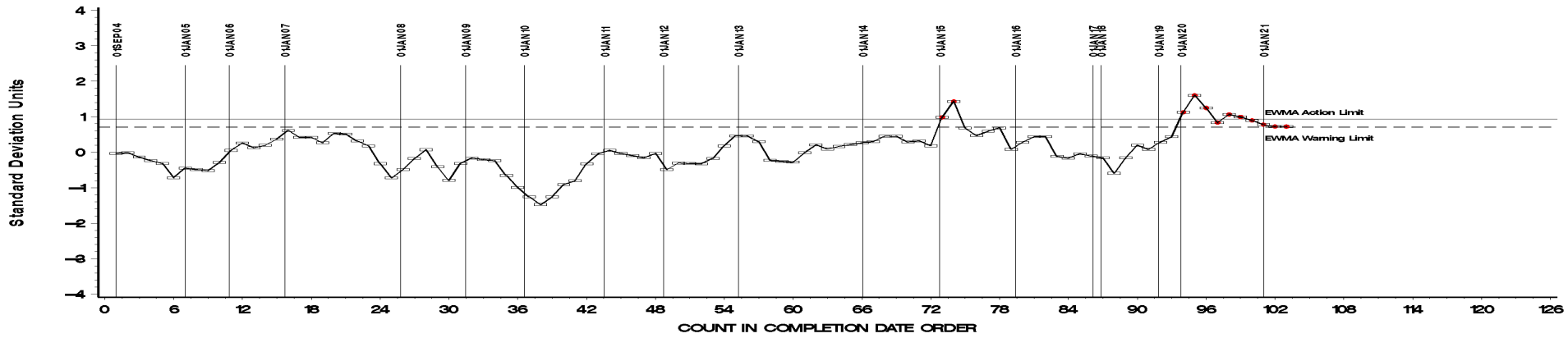
A Program of ASTM International

AVERAGE SLUDGE RATING

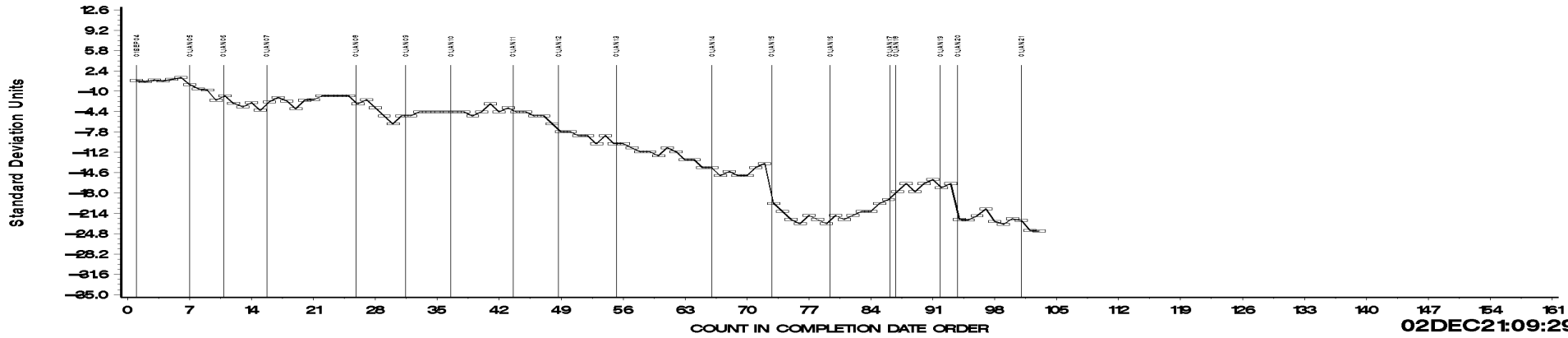
LTMS Severity Analysis



LTMS Precision Analysis



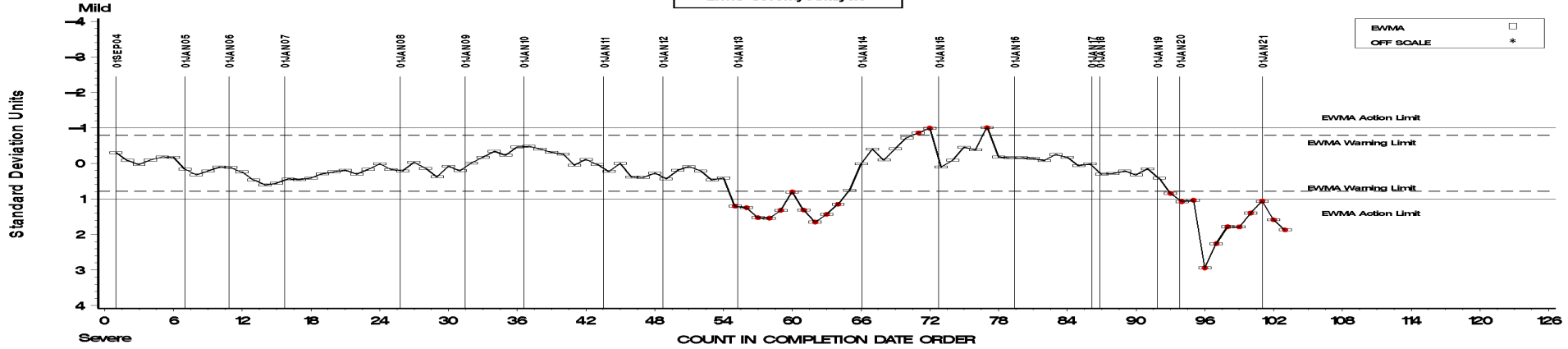
CUSUM Severity Analysis



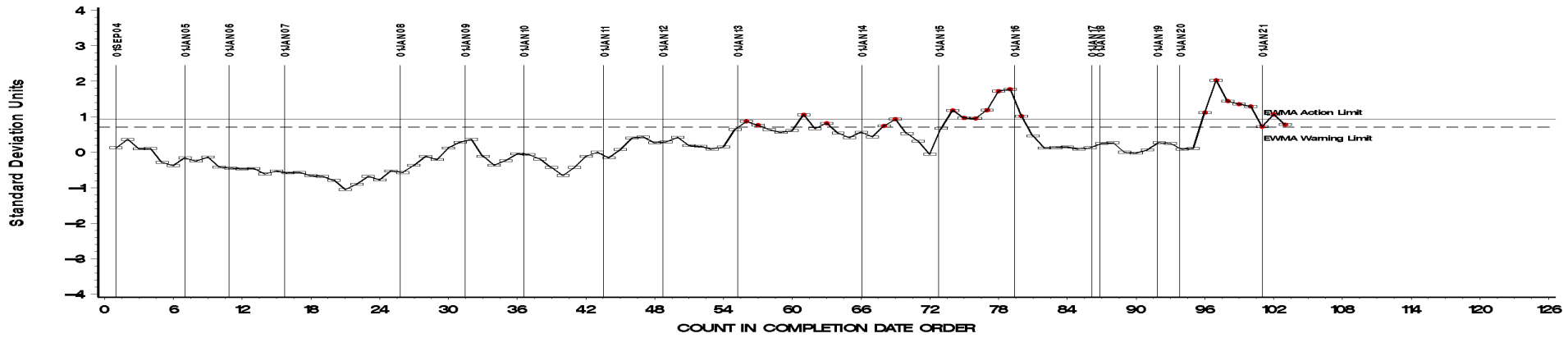
ISM INDUSTRY OPERATIONALLY VALID DATA

INJECTOR SCREW WEIGHT LOSS ADJUSTED TO 3.9% SOOT

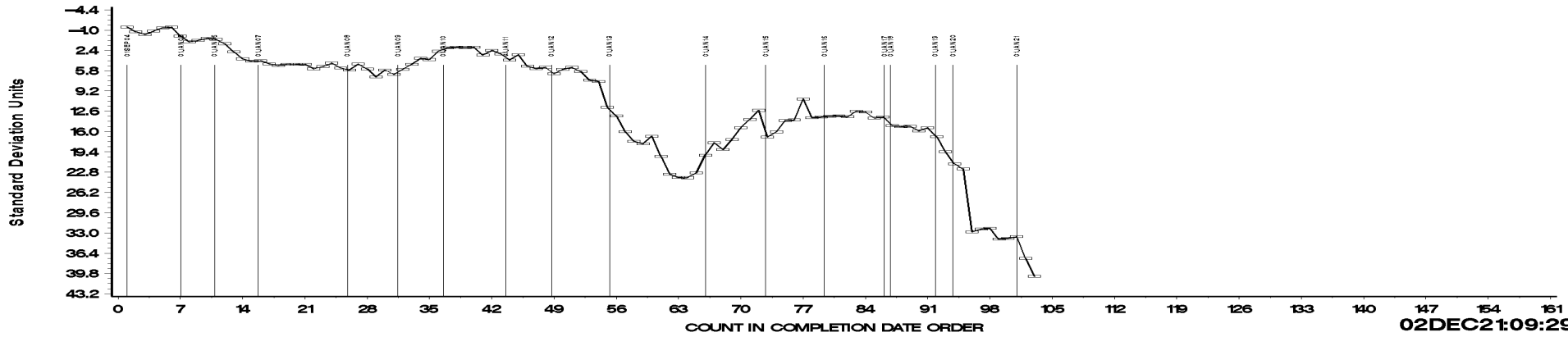
LTMS Severity Analysis



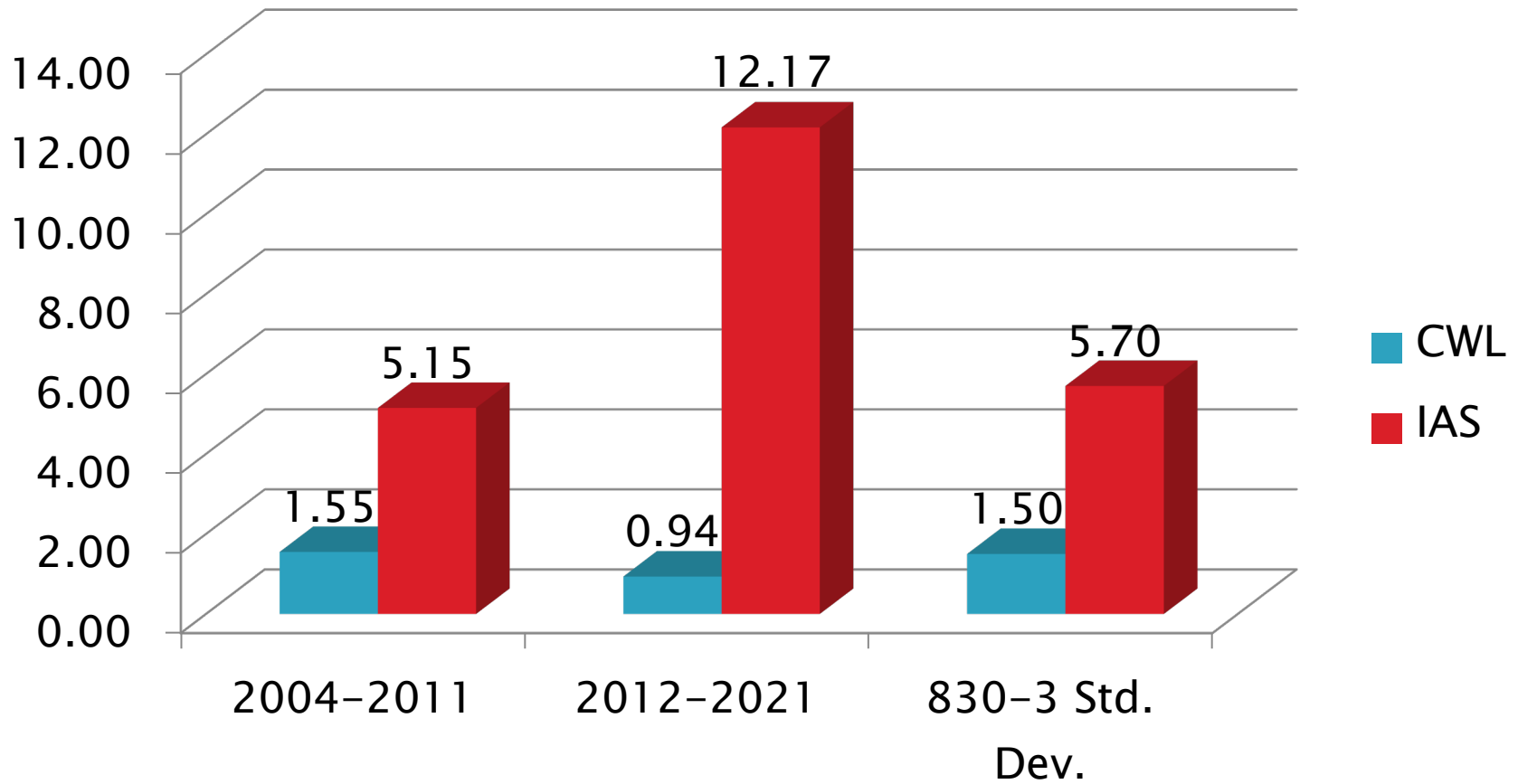
LTMS Precision Analysis



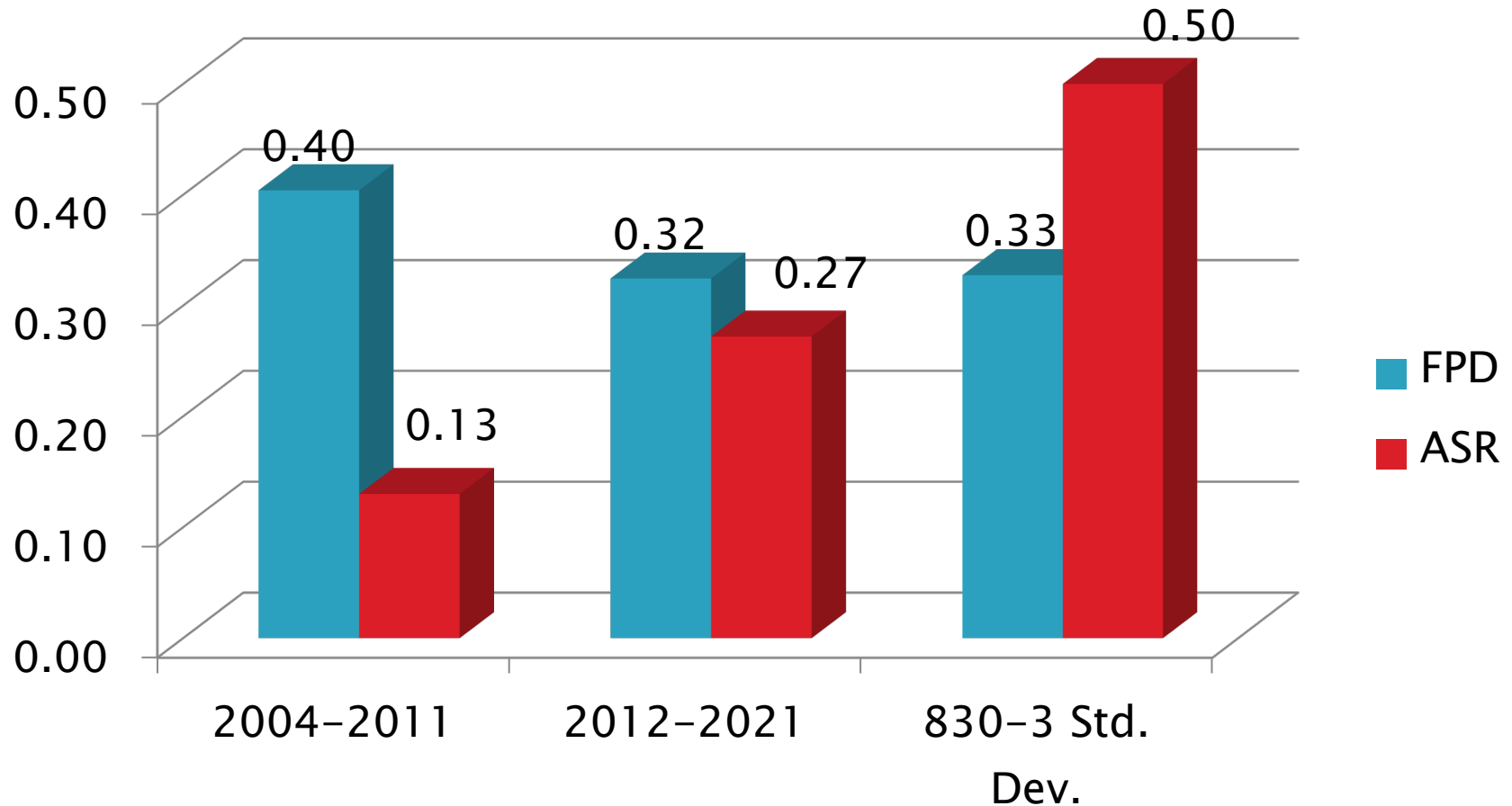
CUSUM Severity Analysis



ISM Precision Estimates



ISM Precision Estimates



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Test Monitoring Center
<https://www.astmtmc.org>



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EOAT

»» October 2021

EOAT Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		0

EOAT Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

EOAT Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

EOAT Test Severity

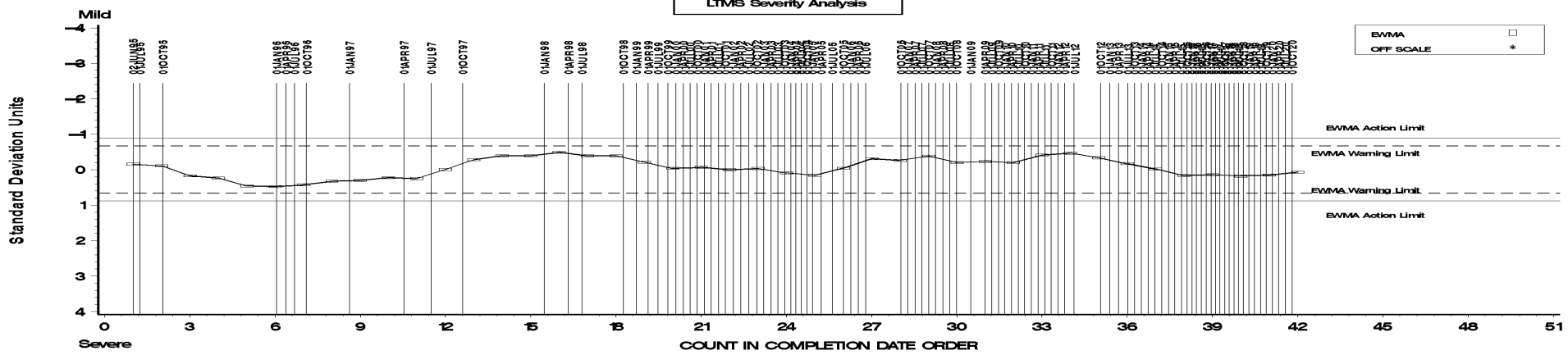
- ▶ As no tests were run during this period no statement on test severity can be made.

EOAT INDUSTRY OPERATIONALLY VALID DATA

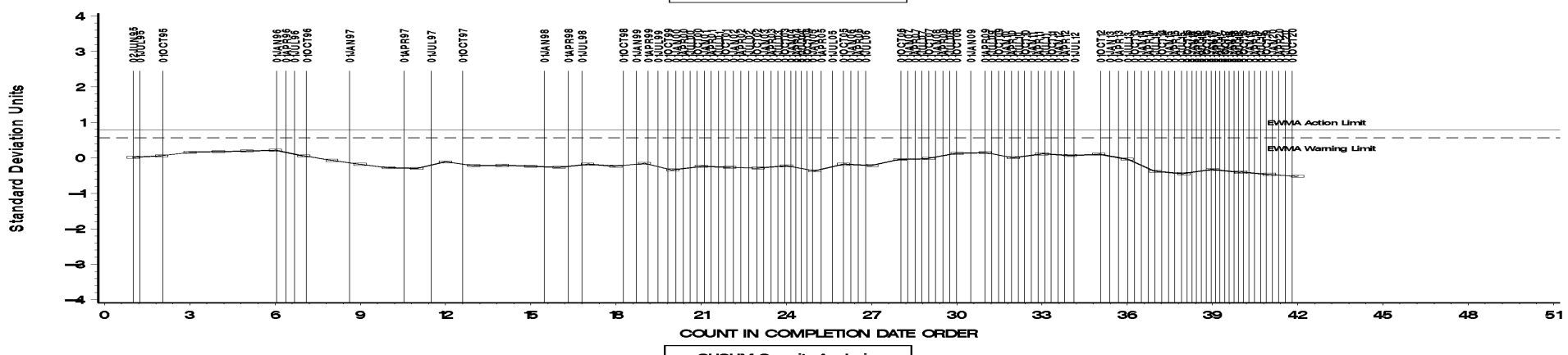


ENGINE OIL AERATION

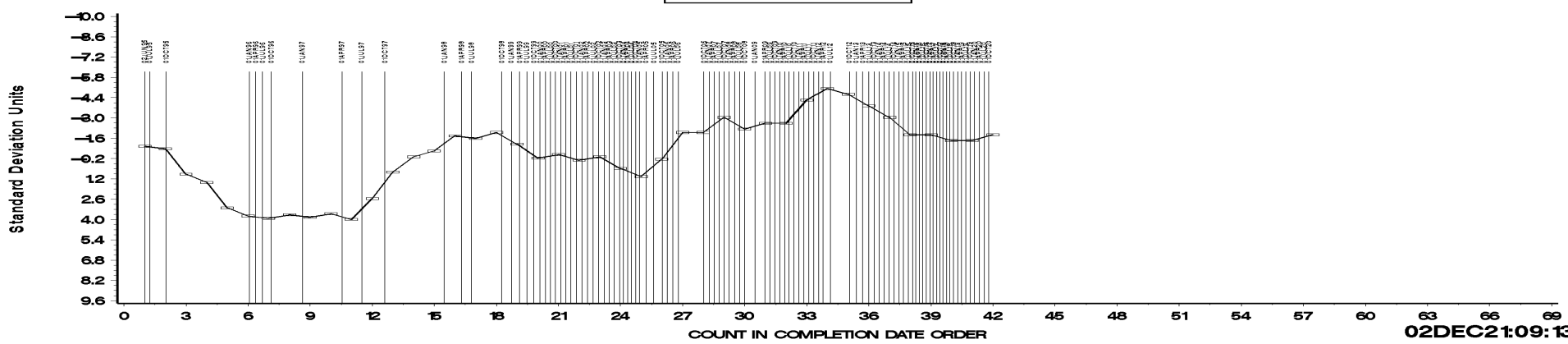
LTMS Severity Analysis



LTMS Precision Analysis

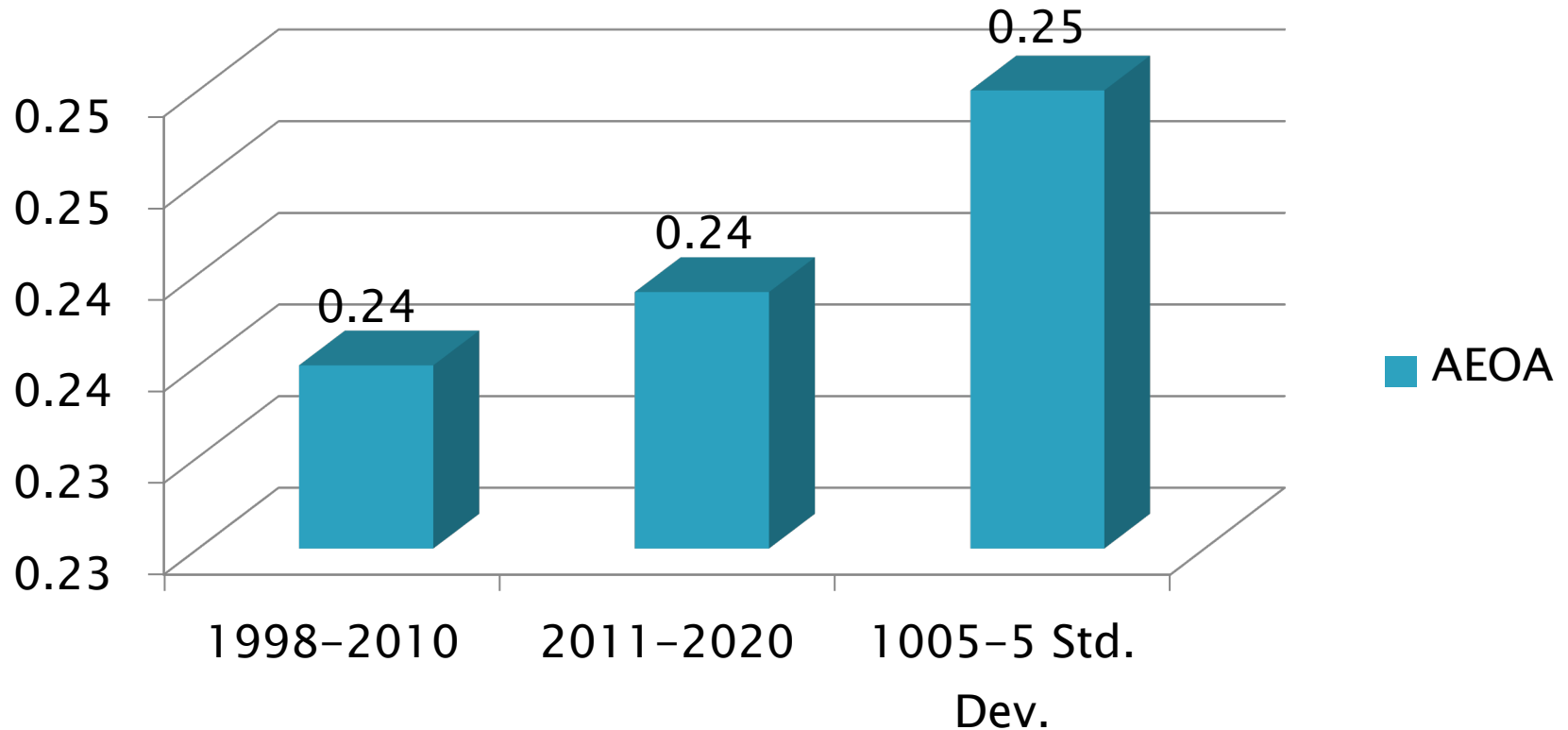


CUSUM Severity Analysis



EOAT Precision Estimates

AEOA



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RFWT

»» October 2021

RFWT Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	0
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	0
Total		0

RFWT Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

RFWT Lost Tests*

Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

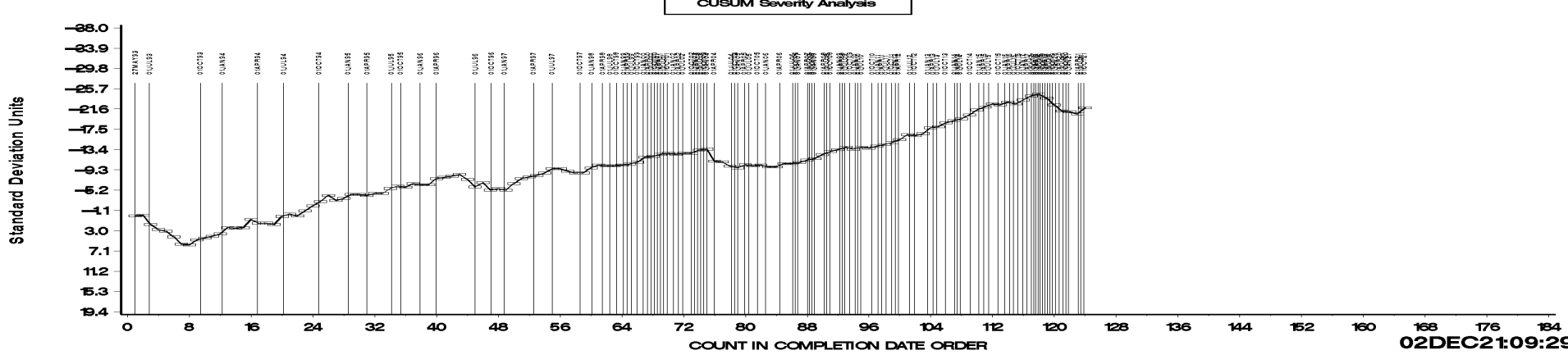
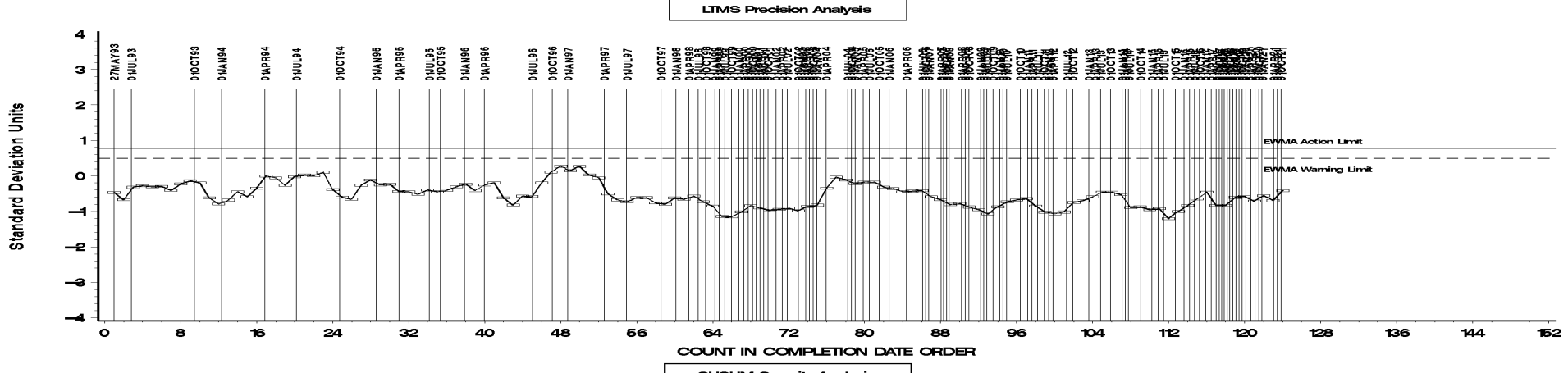
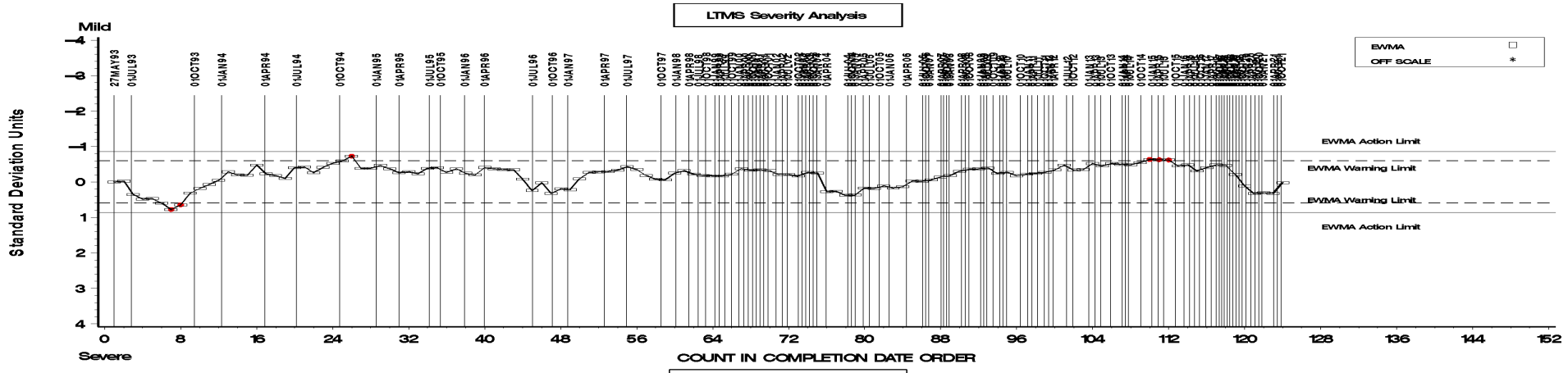
RFWT Test Severity

- ▶ As no tests were run during this period no statement on test severity can be made.

RFWT INDUSTRY OPERATIONALLY VALID DATA

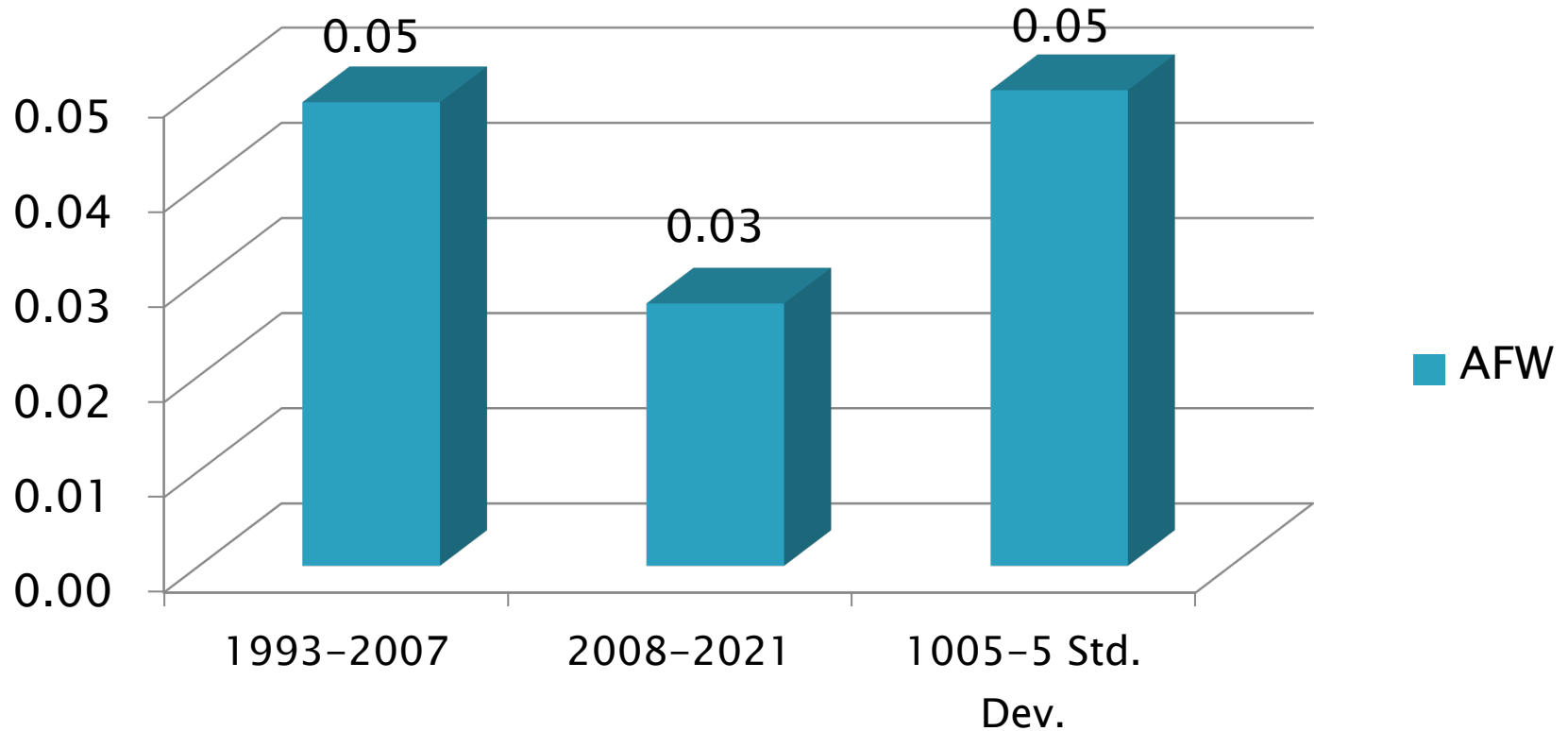


Average Follower Wear



RFWT Precision Estimates

AFW



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Test Monitoring Center
<https://www.astmtmc.org>



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Mack T-8/T-8E

»» October 2021

T-8/T-8E Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	1
Failed Calibration Test	OC	0
Operationally Invalid	LC	0
Aborted	XC	2
Total		3

T-8/T8-E Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

T-8/T8-E Lost Tests*

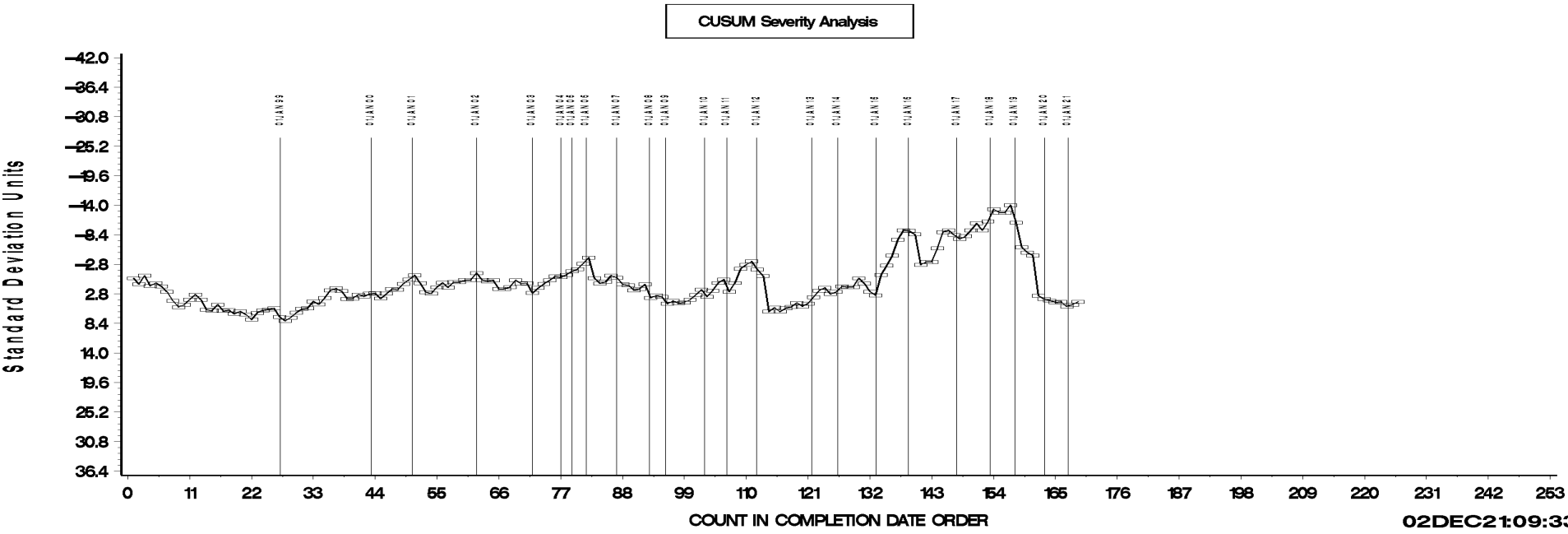
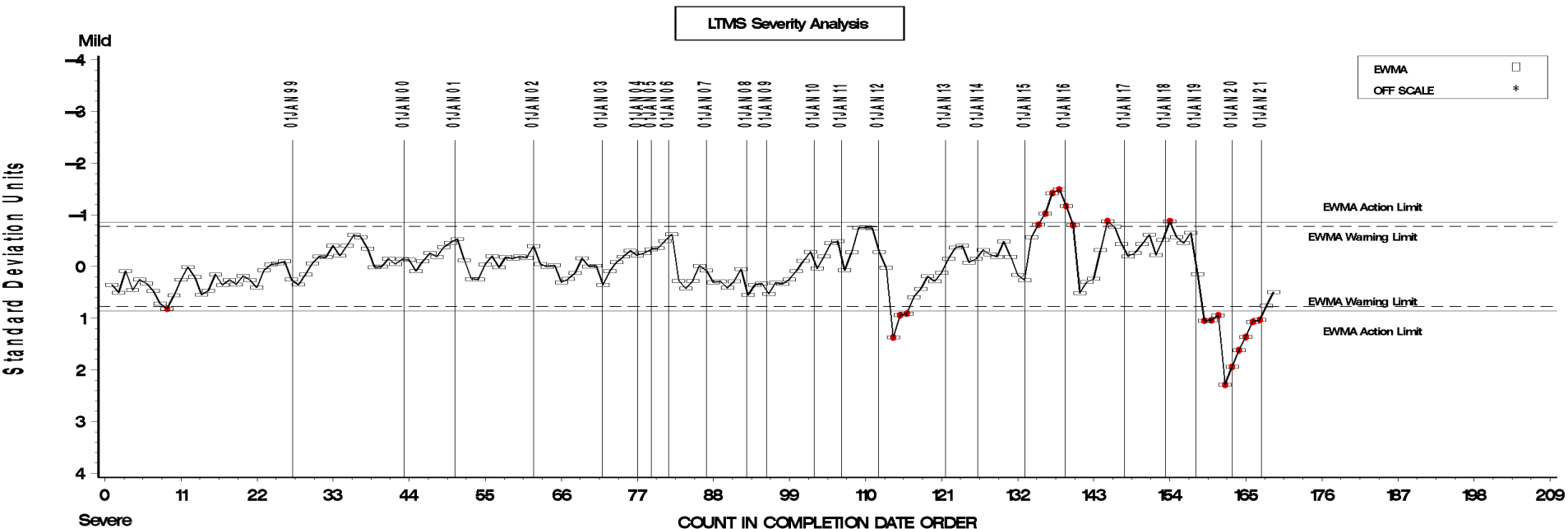
Status	Cause	#
Invalid	No invalid tests	0
Aborted	Missed oil addition	1
Aborted	High oil consumption/Missed soot window	1
Total		2

*Invalid and aborted tests

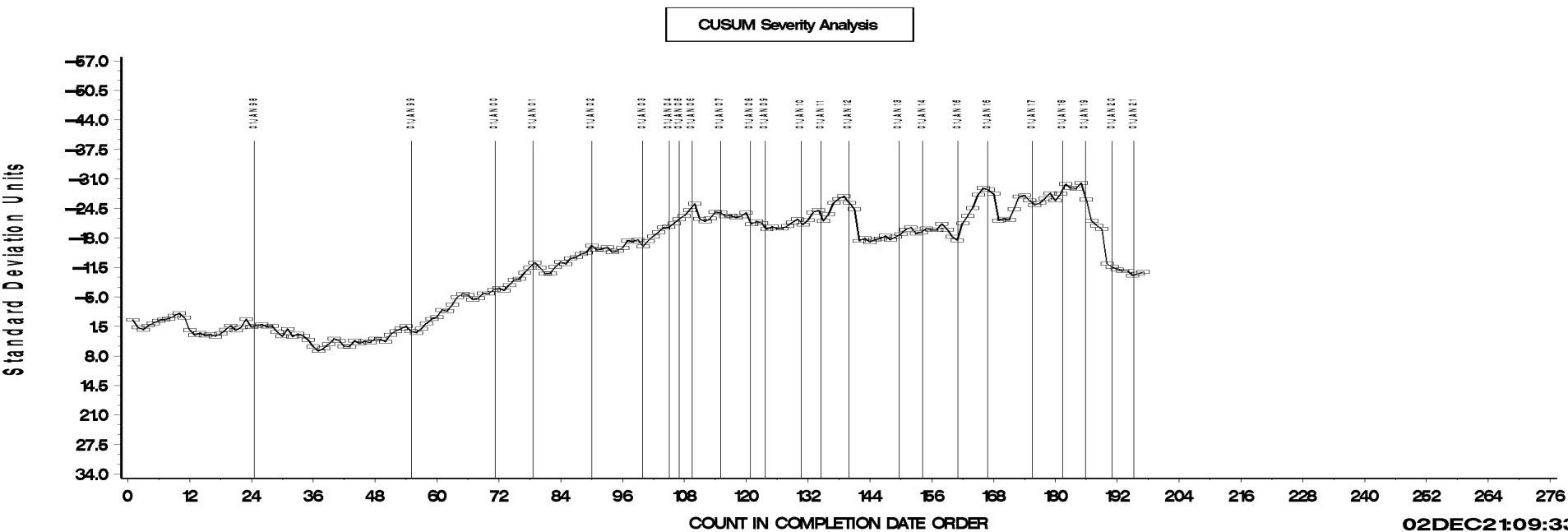
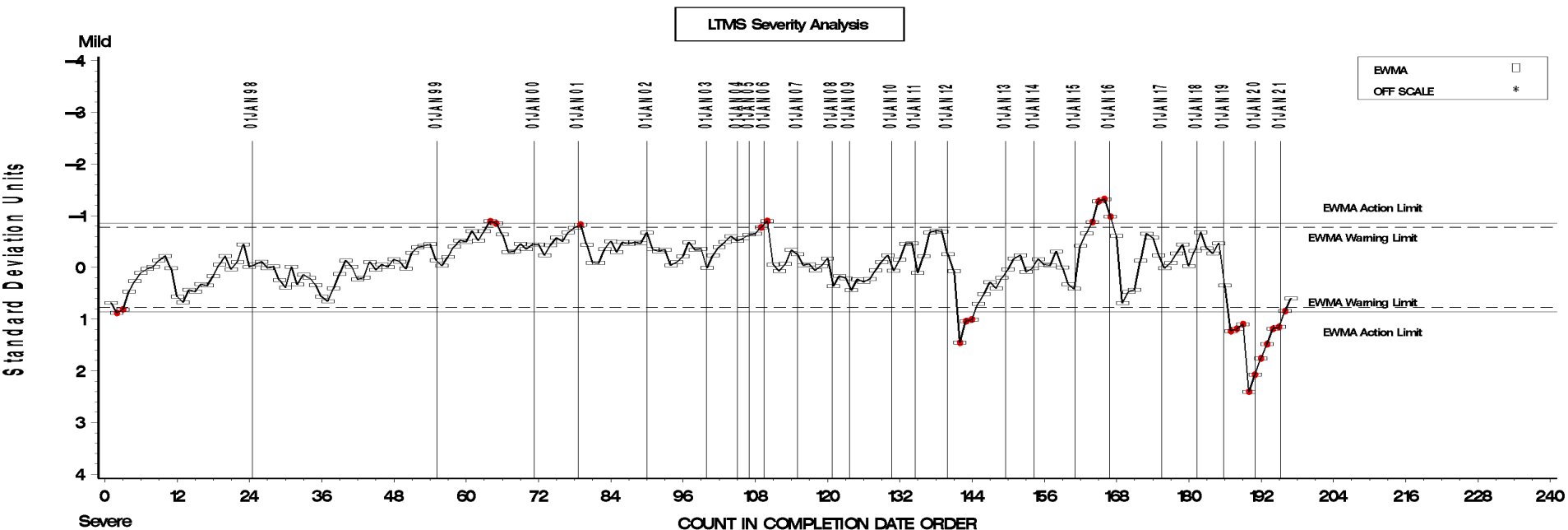
T-8/T-8E Test Severity

- ▶ VI38 is level 2 Zi alarm in mild direction
- ▶ RV48 and RV2 are in control.

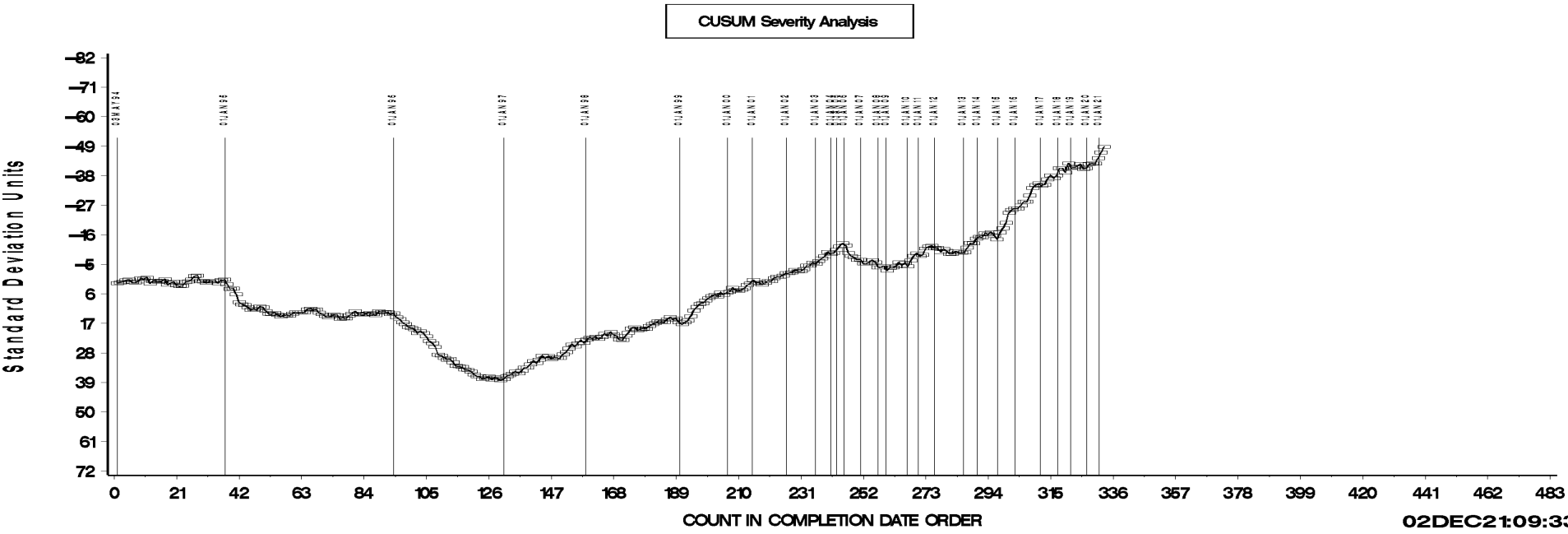
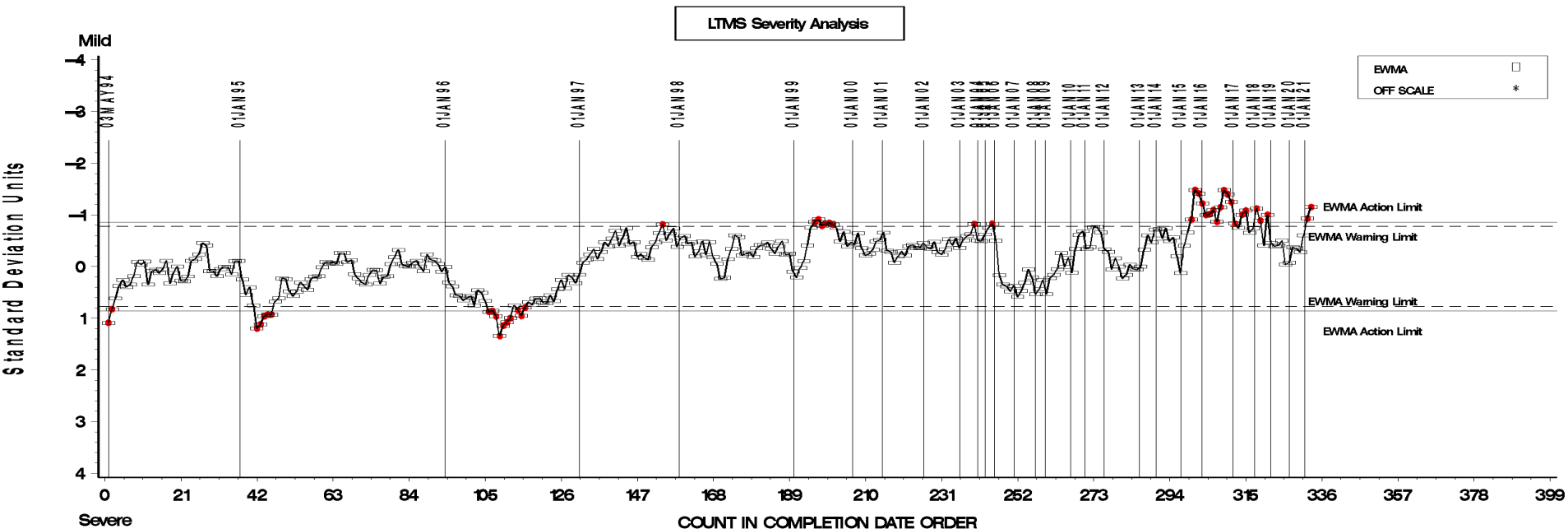
RELATIVE VISCOSITY @ 4.8% (100% LOSS)



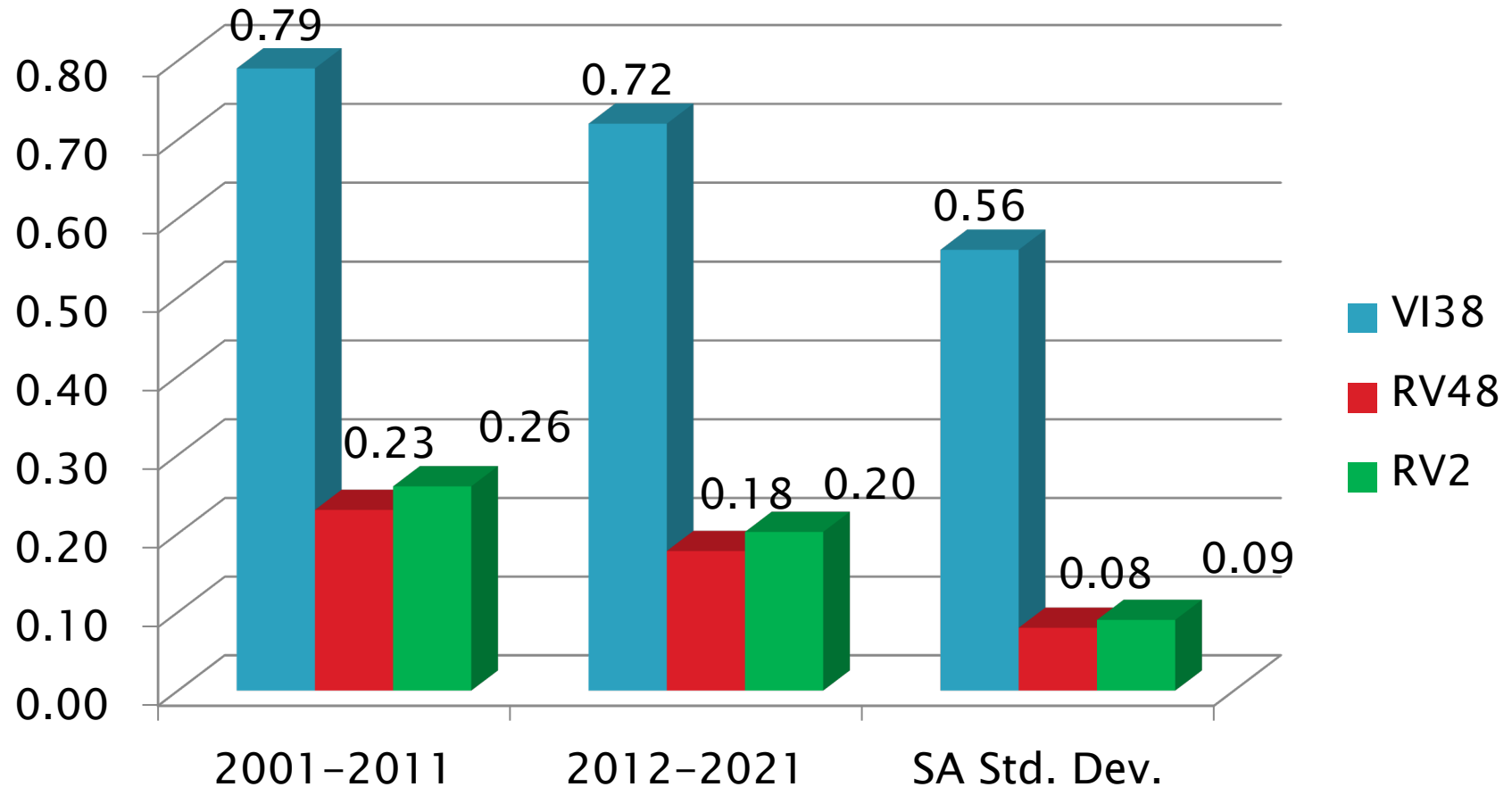
RELATIVE VISCOSITY @ 4.8% (50% LOSS)



VISCOSITY INCR @ 3.8% SOOT



T-8/E Precision Estimates



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Mack T-11

»» October 2021

T-11 Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	4
Failed Calibration Test	OC	0
Operationally Invalid	LC	1
Aborted	XC	1
Total		6

T-11 Failed Tests

Failed Parameter	Number of Tests
No failed tests	0
Total	0

T-11 Lost Tests*

Status	Cause	#
Invalid	Did not reach 12 cSt Vis increase	1
Aborted	High oil consumption	1
Total		2

*Invalid and aborted tests

T-11 Test Severity

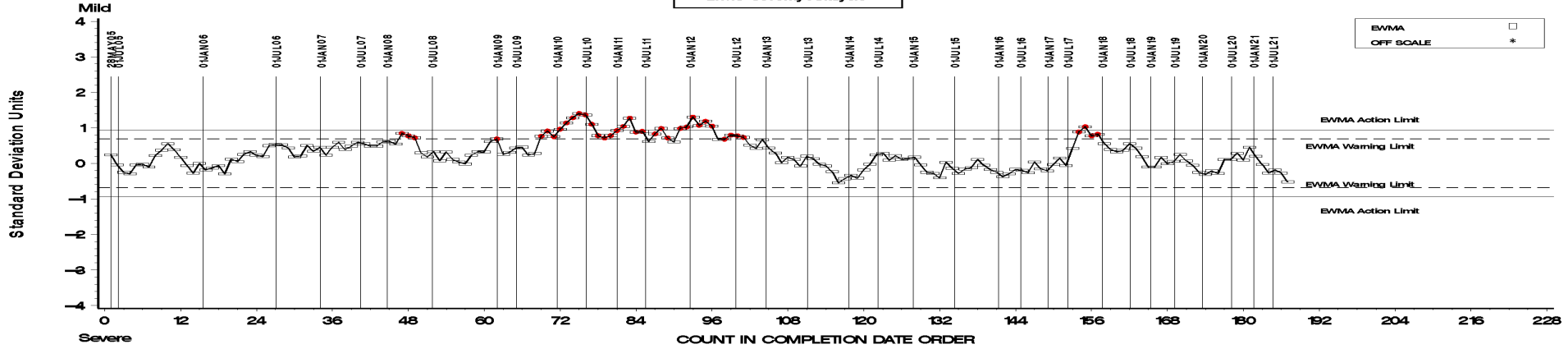
- ▶ SOOT, SOOT5 and MRV are in control.
- ▶ SOOT4 is in severity action alarm in the severe direction.
- ▶ SOOT4 is in precision warning.

T-11 INDUSTRY OPERATIONALLY VALID DATA

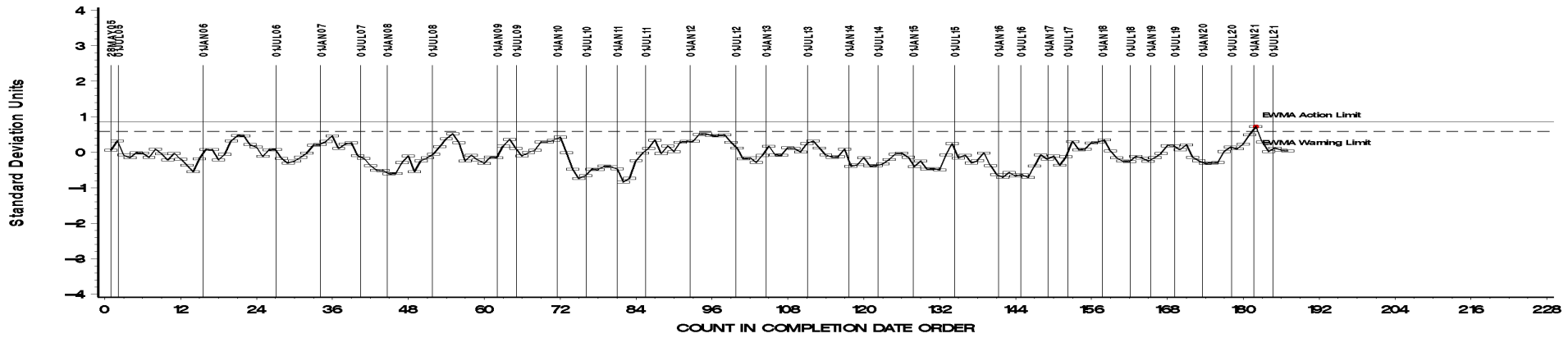


SOOT @ 15 cSt — FINAL RESULT

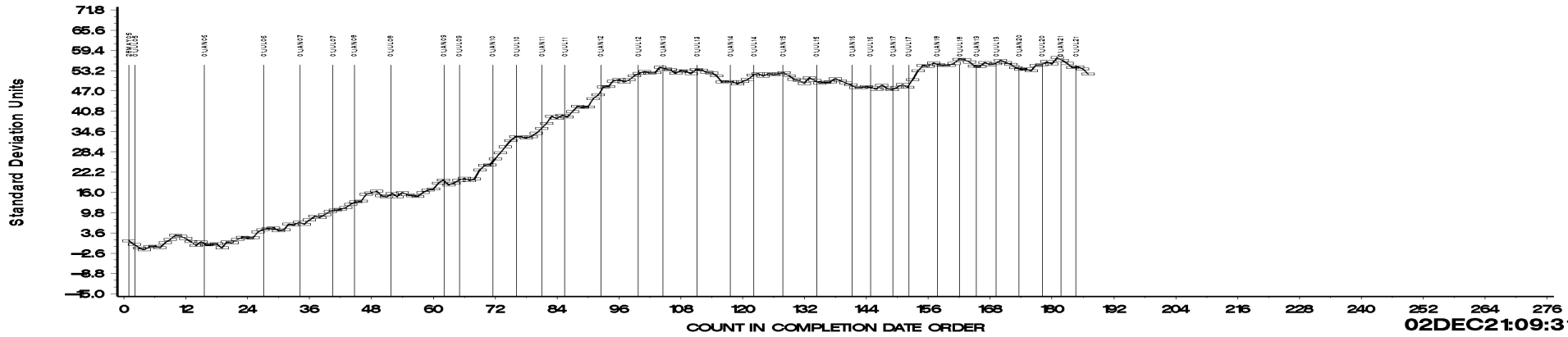
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

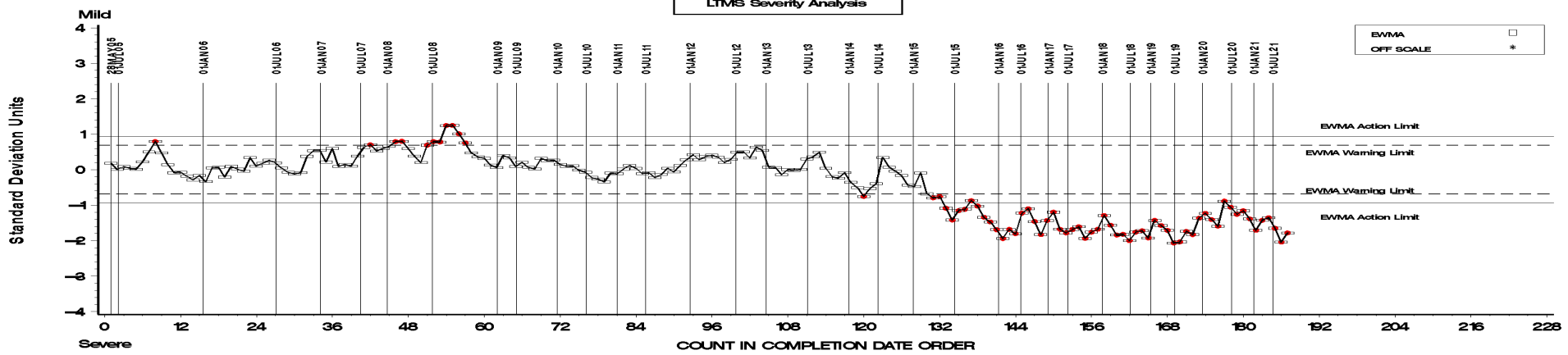


T-11 INDUSTRY OPERATIONALLY VALID DATA

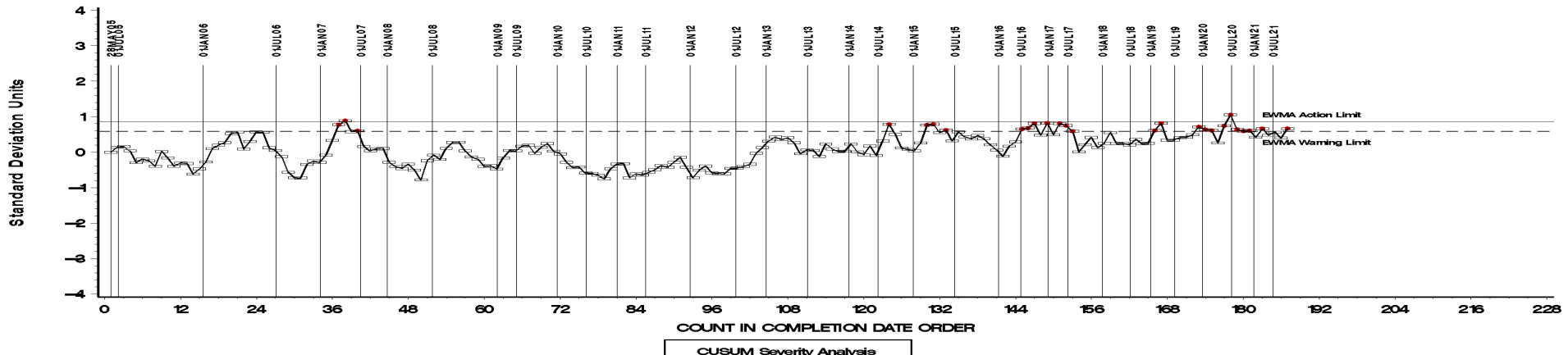


SOOT @ 4 cSt — FINAL RESULT

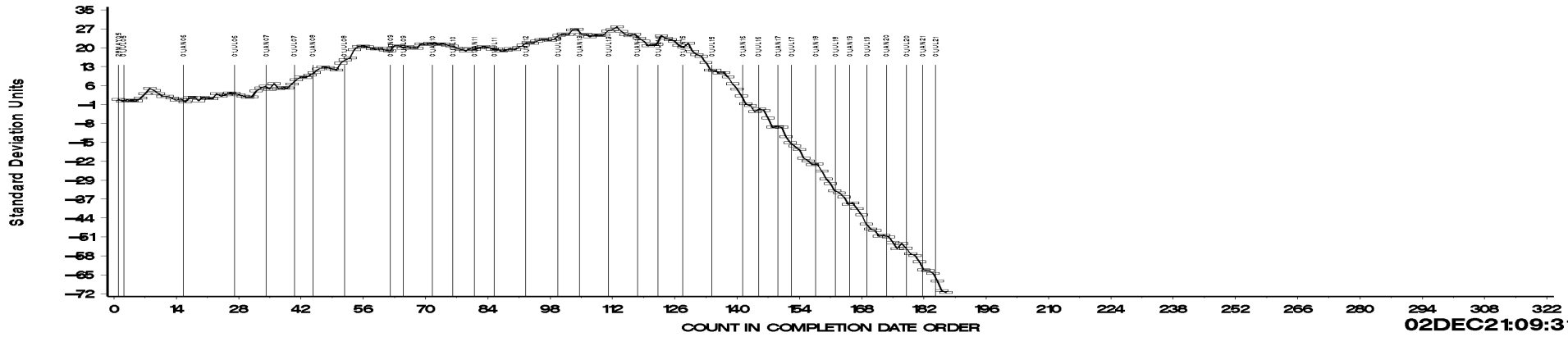
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

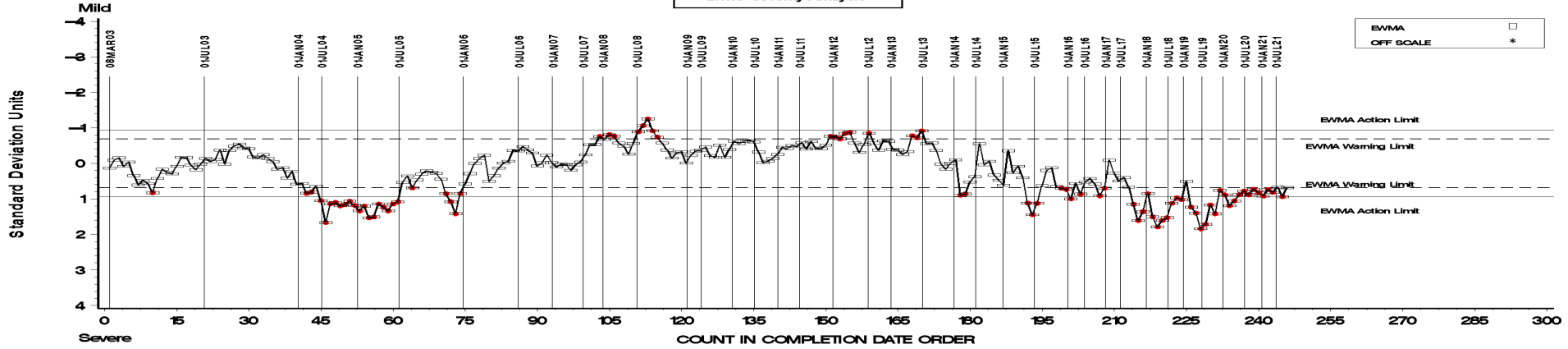


T-11 INDUSTRY OPERATIONAL DAILY VALID DATA

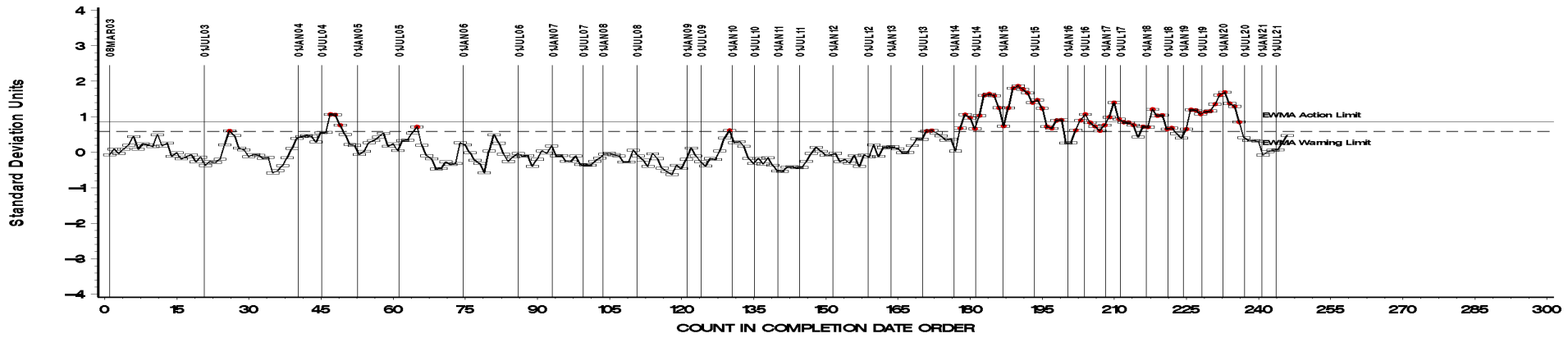


MRV VISCOSITY

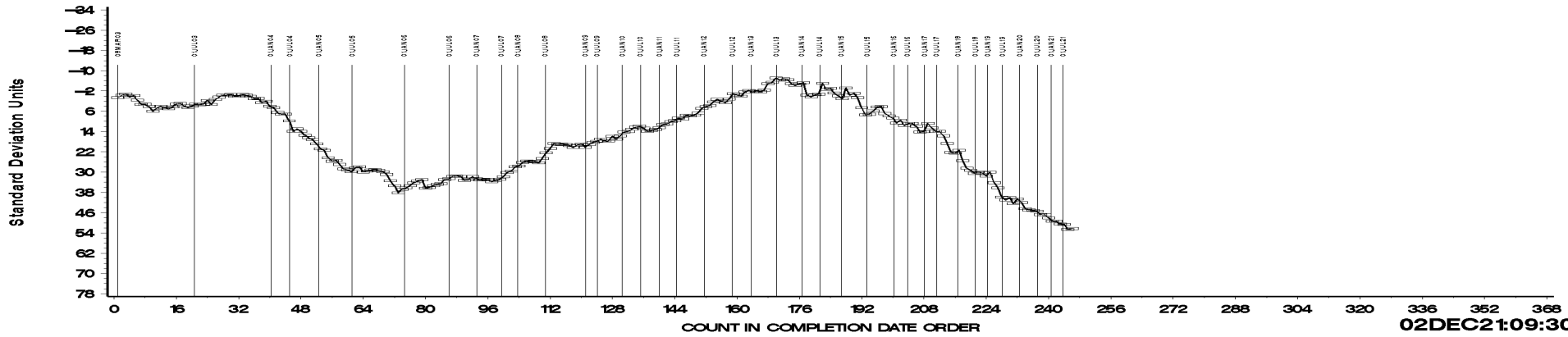
LTMS Severity Analysis



LTMS Precision Analysis



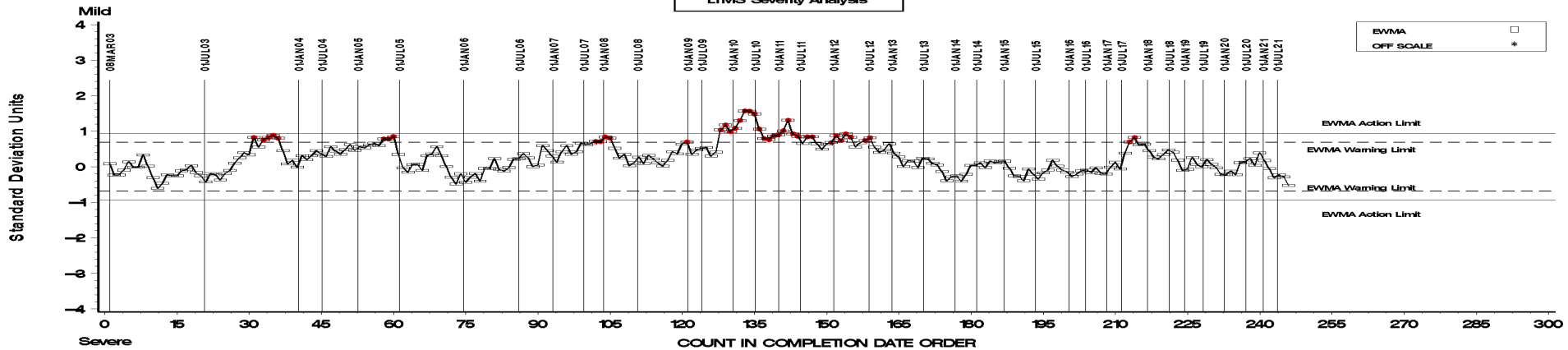
CUSUM Severity Analysis



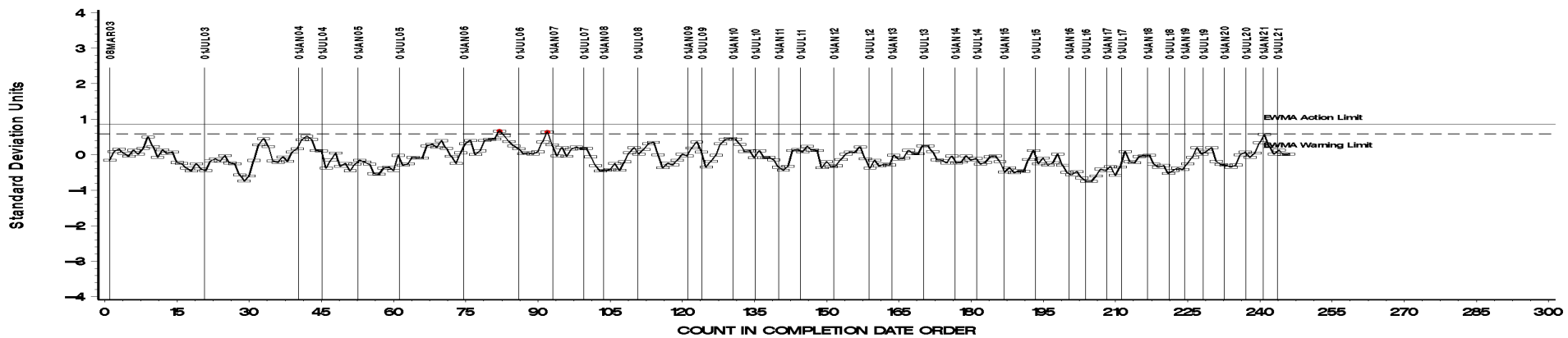
T-11 INDUSTRY OPERATIONALLY VALID DATA

SOOT AT 12 cSt

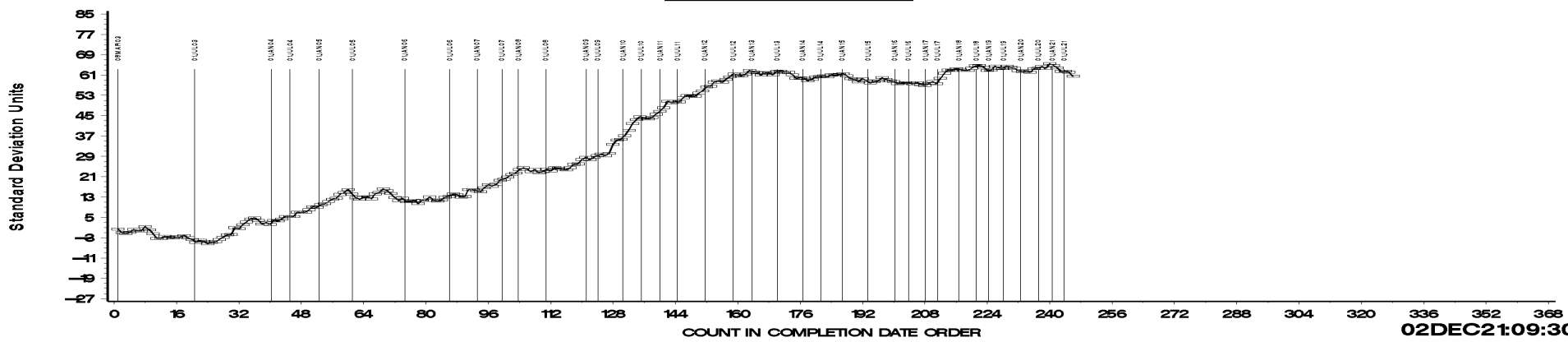
LTMS Severity Analysis



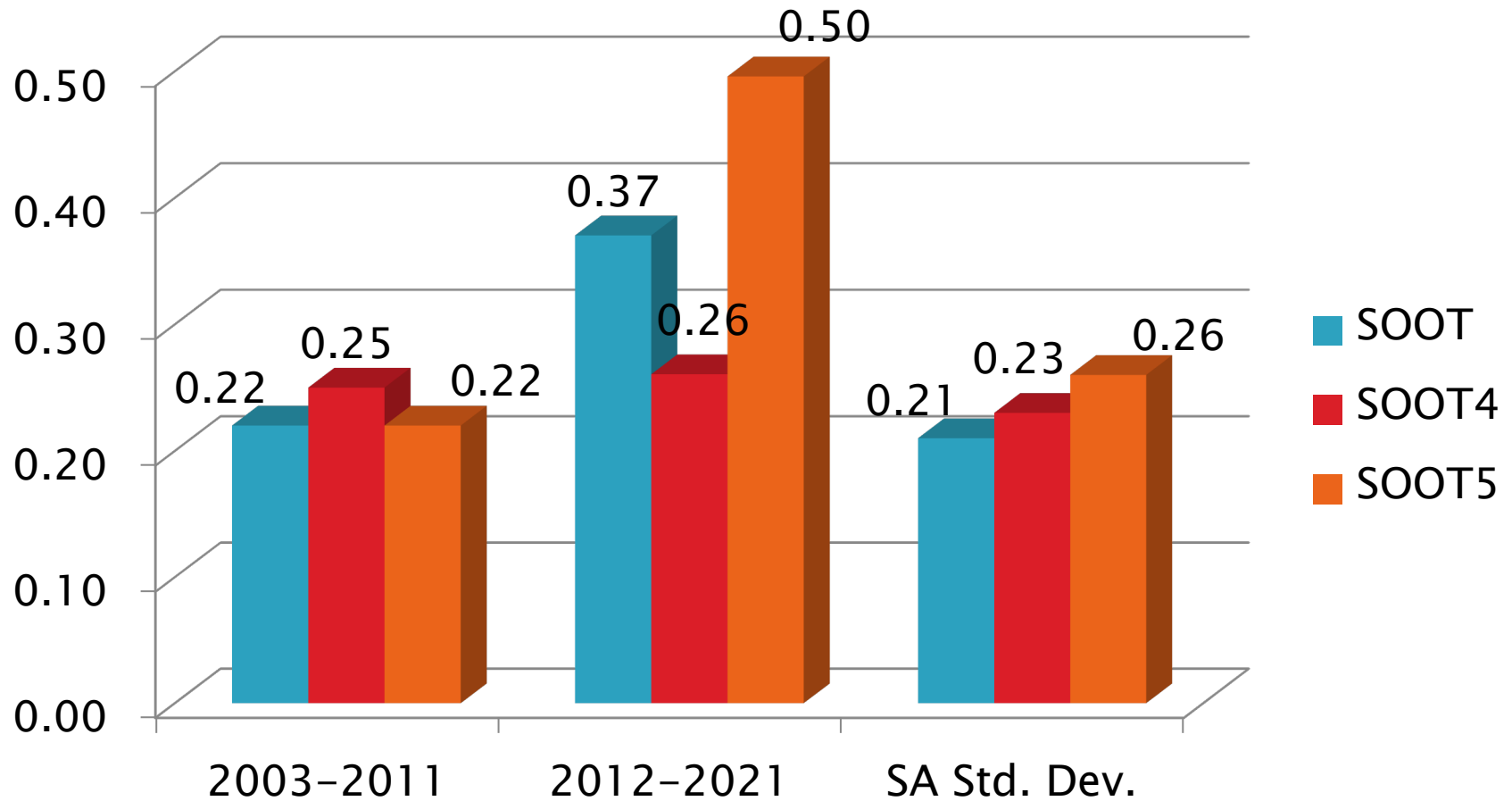
LTMS Precision Analysis



CUSUM Severity Analysis

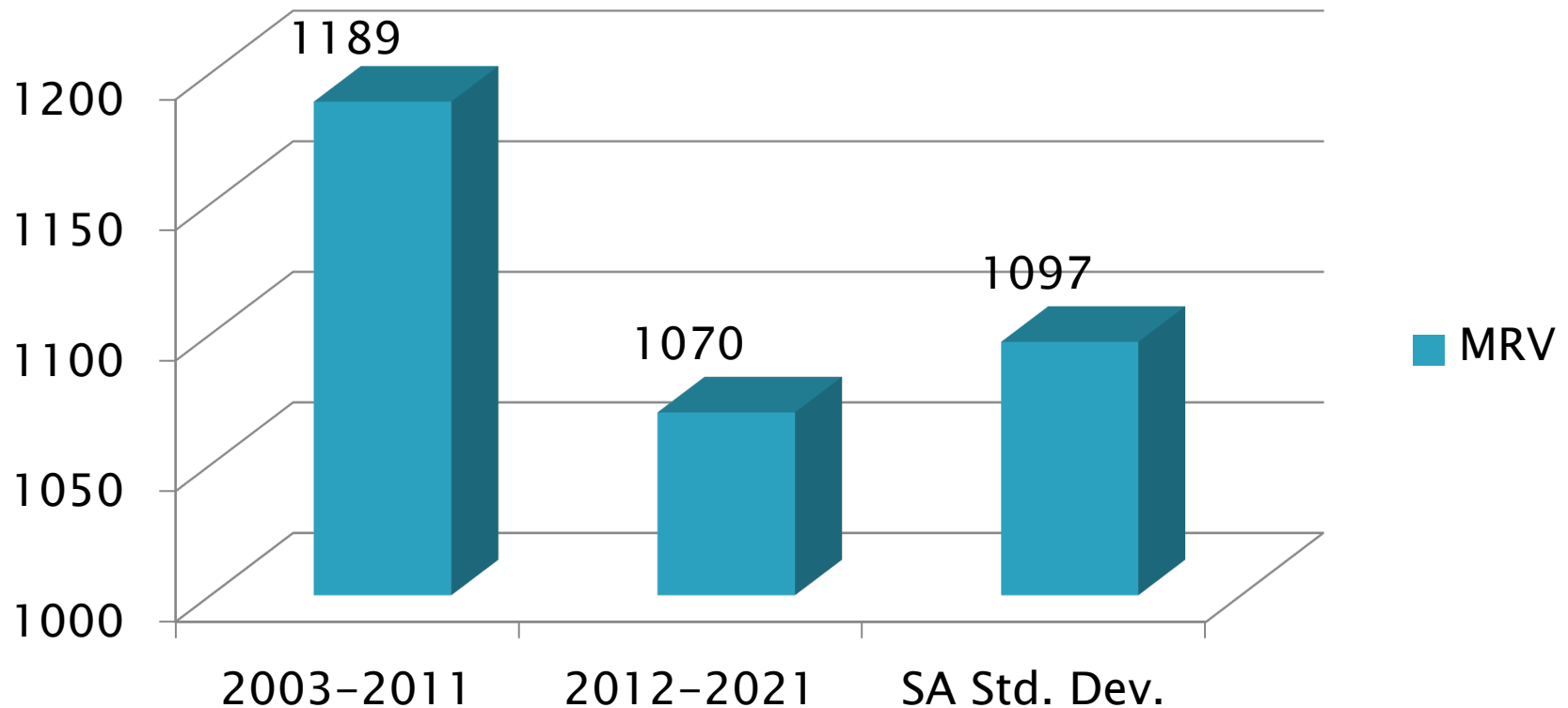


T-11 Precision Estimates



T-11 Precision Estimates

MRV



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Mack T-12

»» October 2021

T-12 Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	3
Failed Calibration Test	OC	1
Operationally Invalid	LC	1
Aborted	XC	0
Total		5

T-12 Failed Tests

Failed Parameter	Number of Tests
PB and PB2 Severe	1
Total	1

T-12 Lost Tests*

Status	Cause	#
Invalid	Missed soot window	1
Aborted	No aborted tests	0
Total		1

*Invalid and aborted tests

T-12 Test Severity

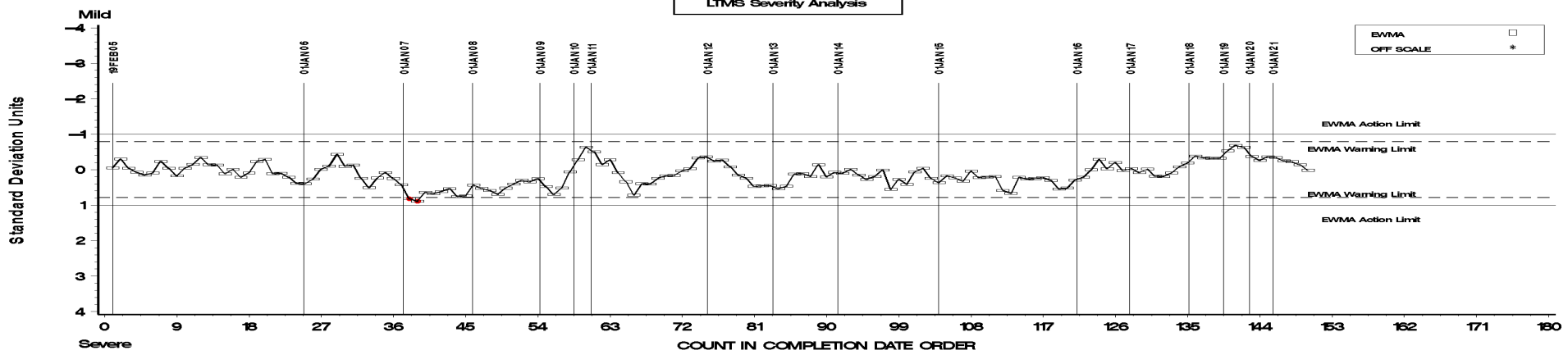
- ▶ All parameters are in control.

MACK T-12 INDUSTRY OPERATIONALLY VALID DATA

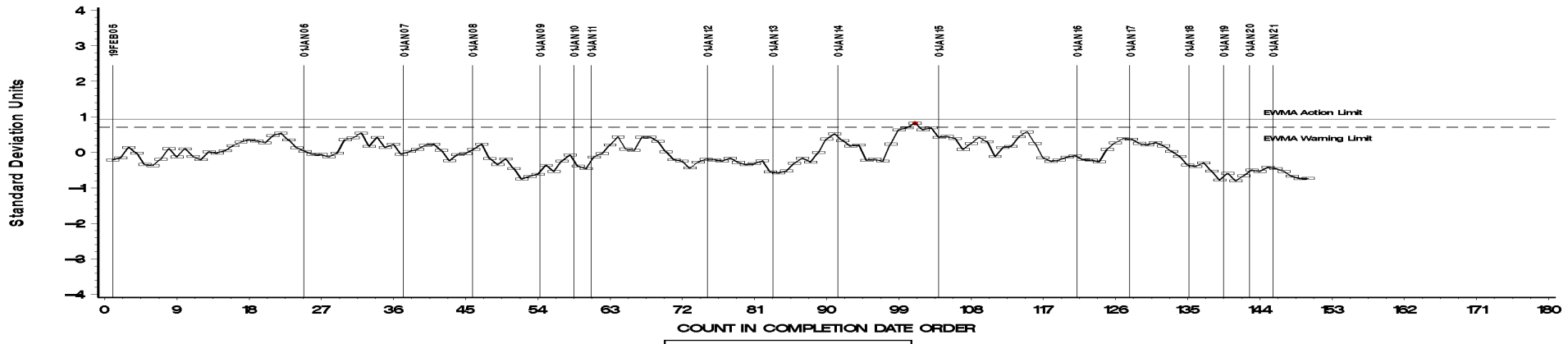


AVG. CYLINDER LINER WEAR (CLW)

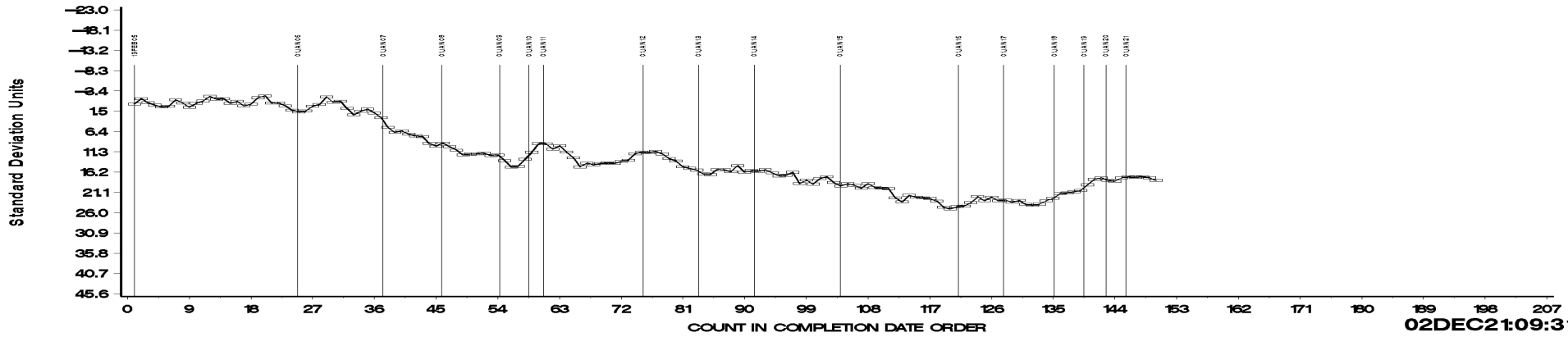
LTMS Severity Analysis



LTMS Precision Analysis



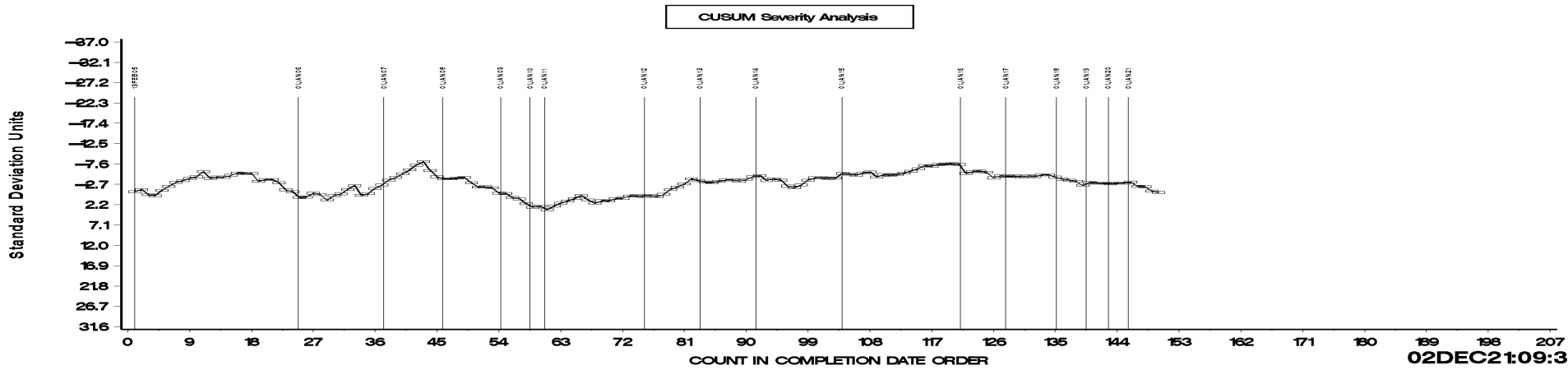
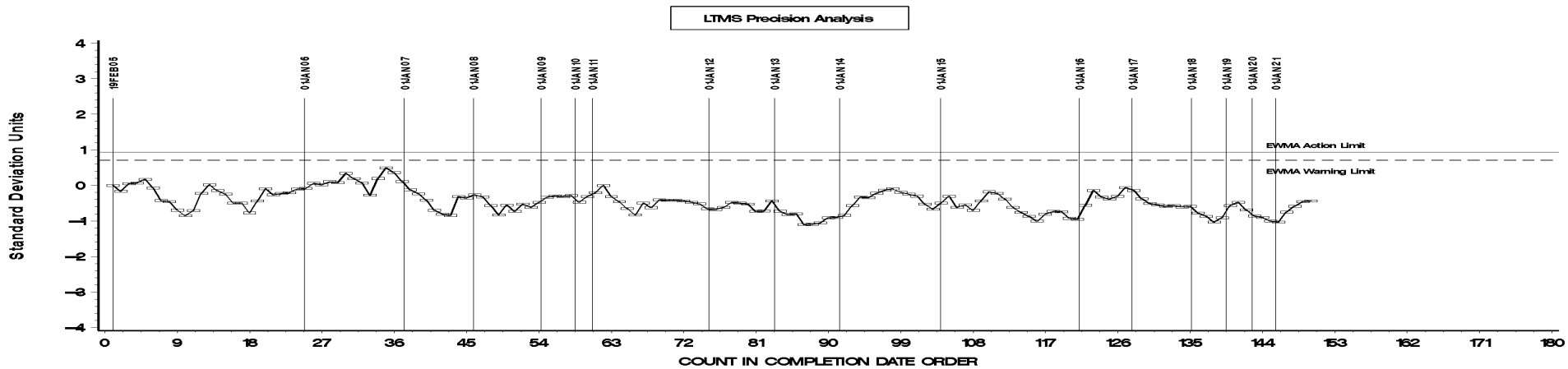
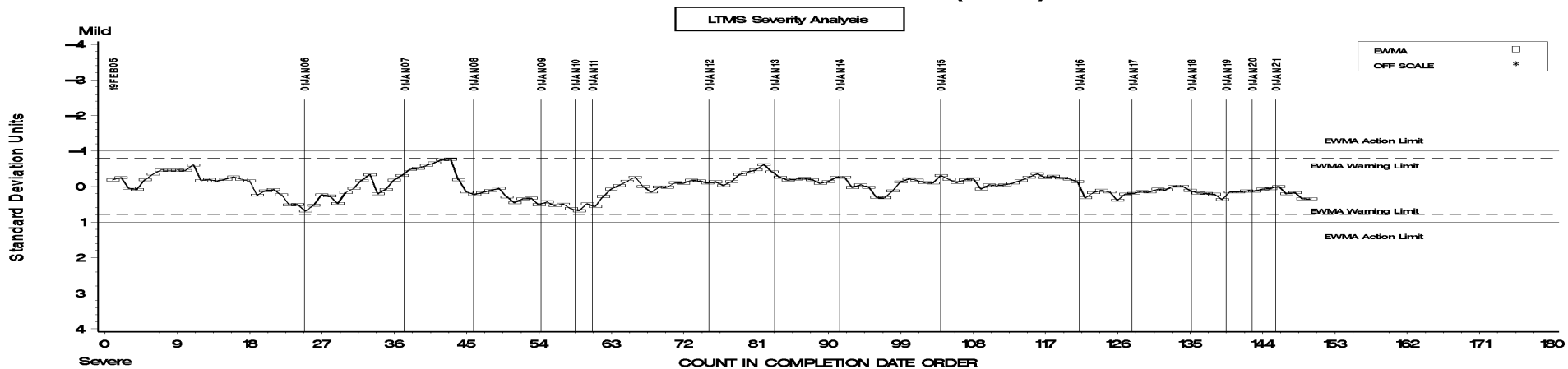
CUSUM Severity Analysis



MACK T-12 INDUSTRY OPERATIONALLY VALID DATA



AVG. TOP RING WEIGHT LOSS (TRWL)

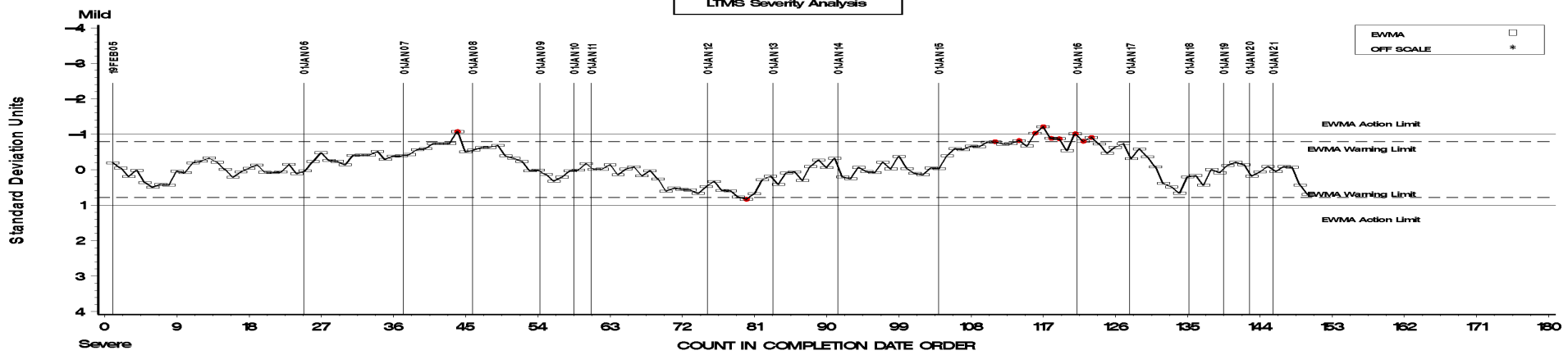


MACK T-12 INDUSTRY OPERATIONAL VALID DATA

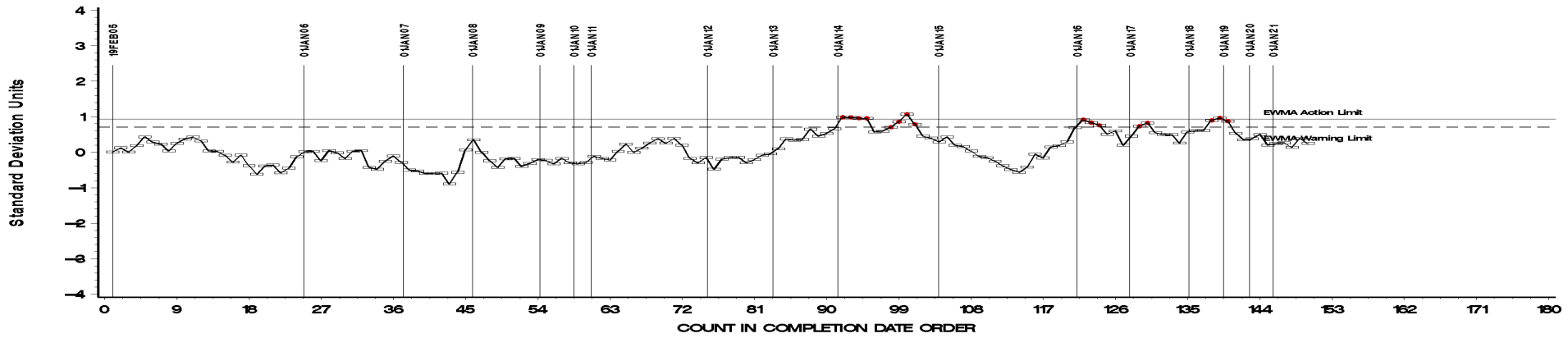


FINAL TRANS. RES. DELTA PB @ EOT

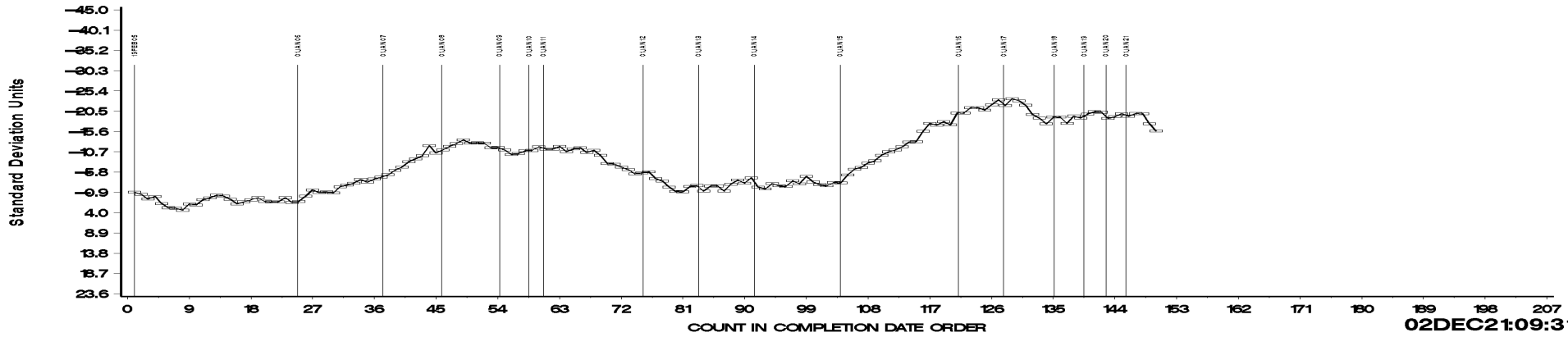
LTMS Severity Analysis



LTMS Precision Analysis



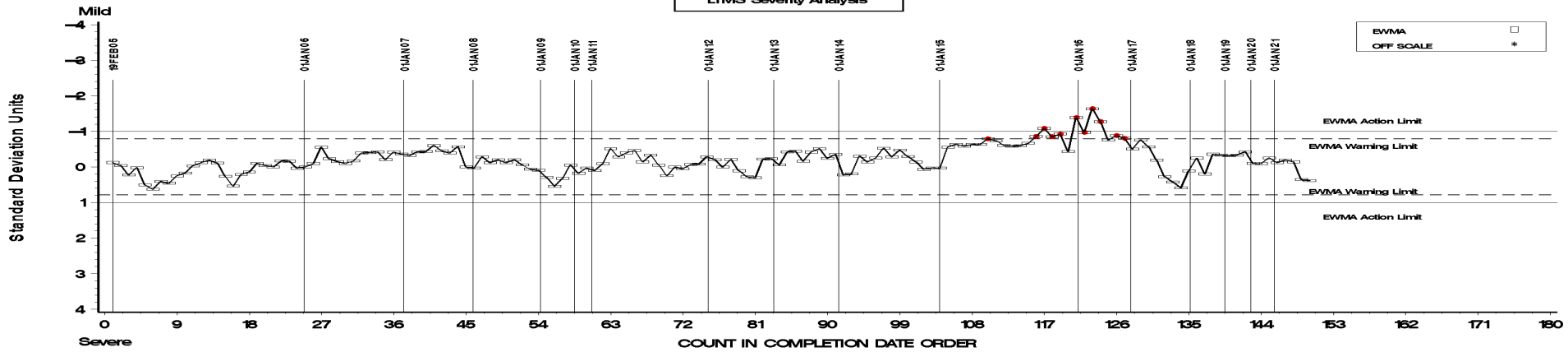
CUSUM Severity Analysis



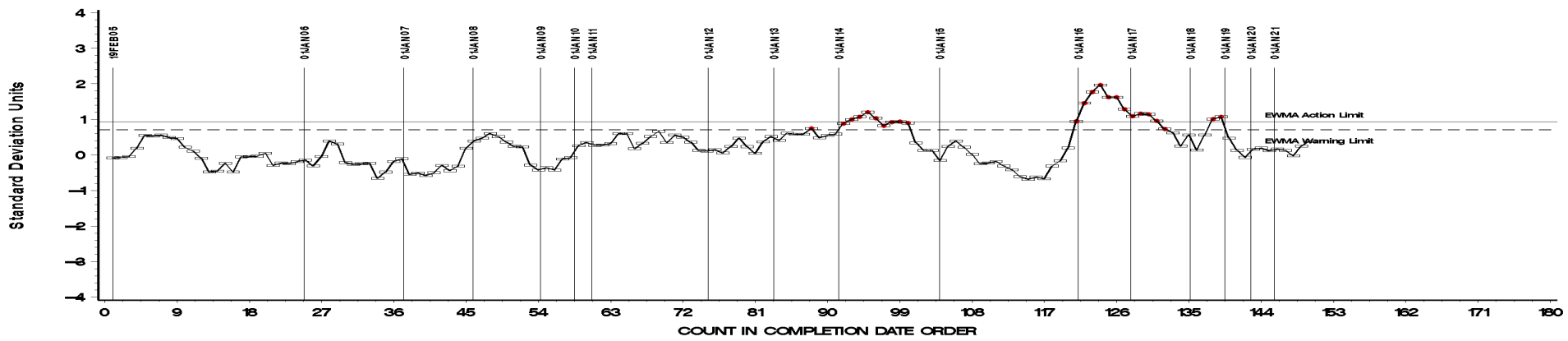
MACK T-12 INDUSTRY OPERATIONAL VALID DATA

FINAL TRANS. RES. DELTA PB 250-300H

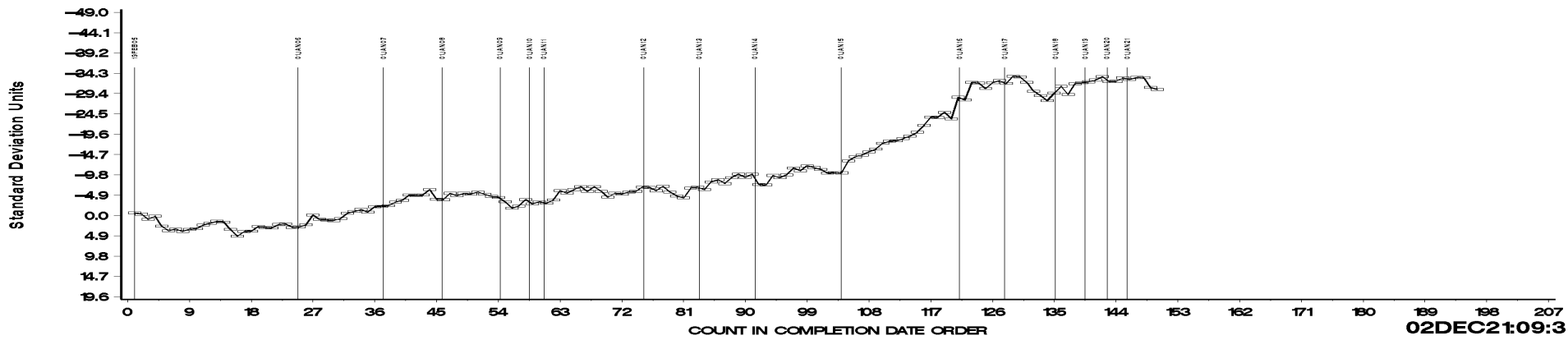
LTMS Severity Analysis



LTMS Precision Analysis



CUSUM Severity Analysis

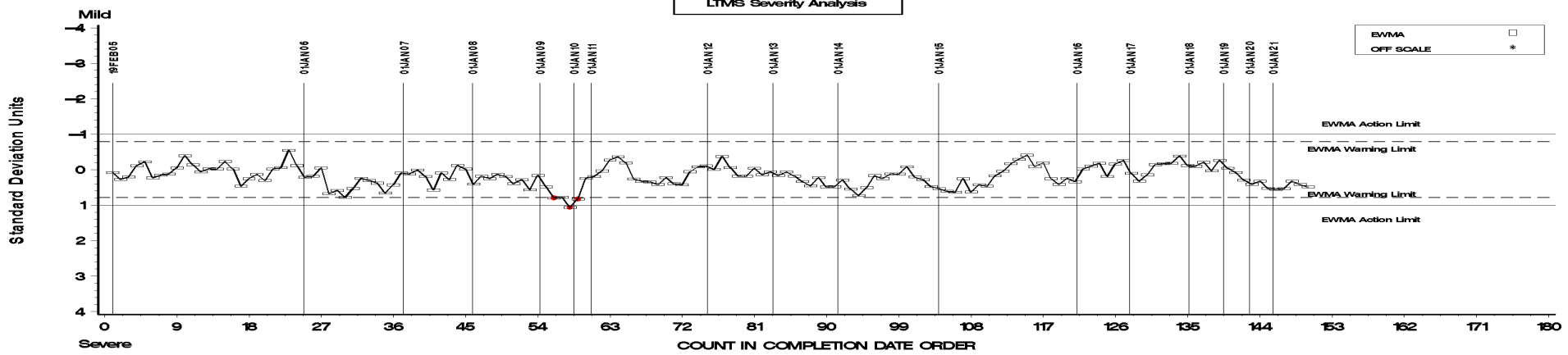


MACK T-12 INDUSTRY OPERATIONALLY VALID DATA

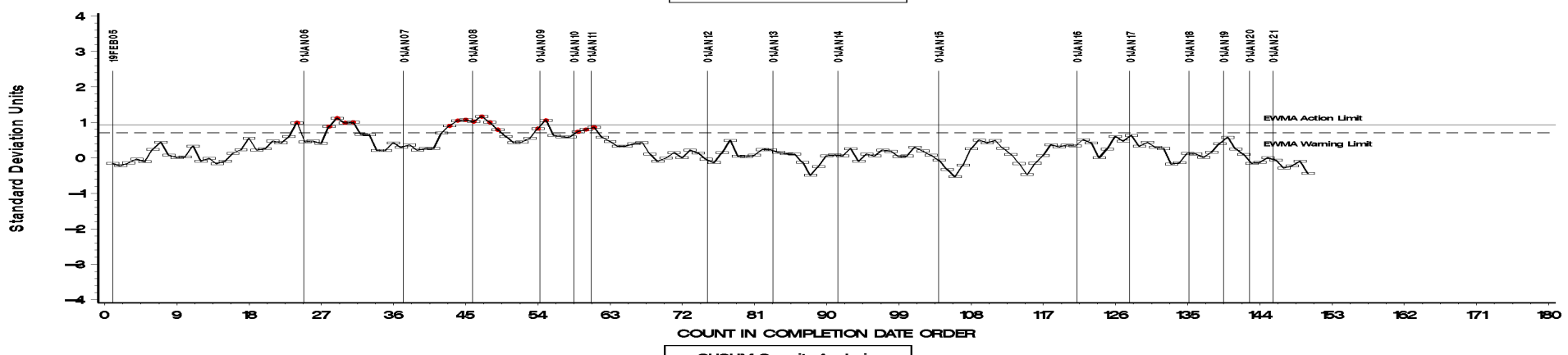


FINAL TRANS. RES. OIL CONSUMPTION

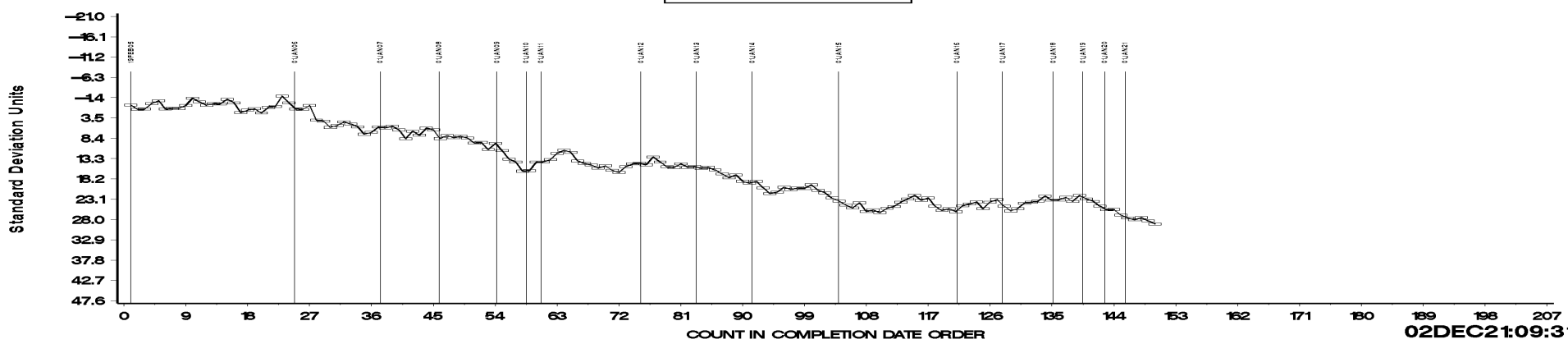
LTMS Severity Analysis



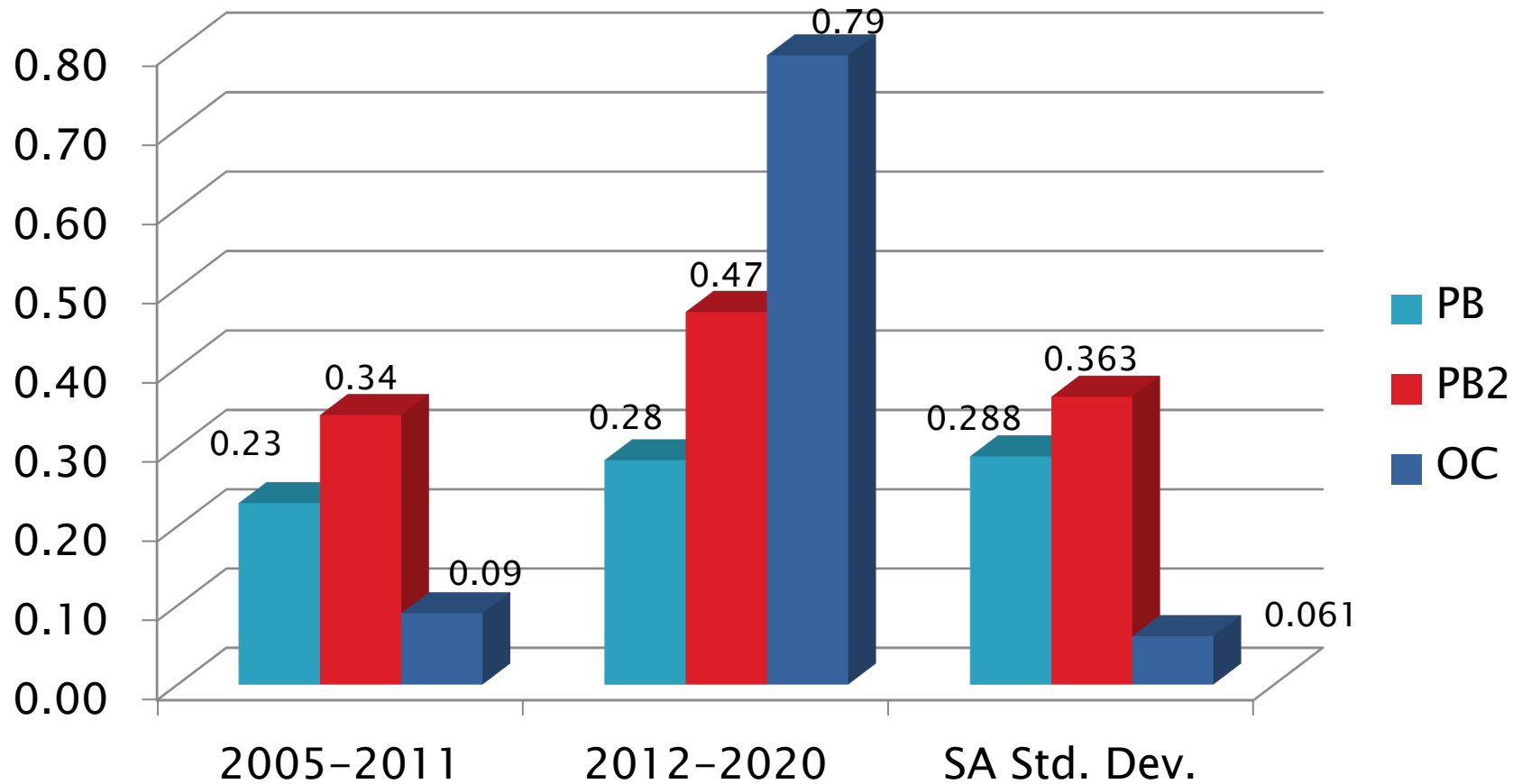
LTMS Precision Analysis



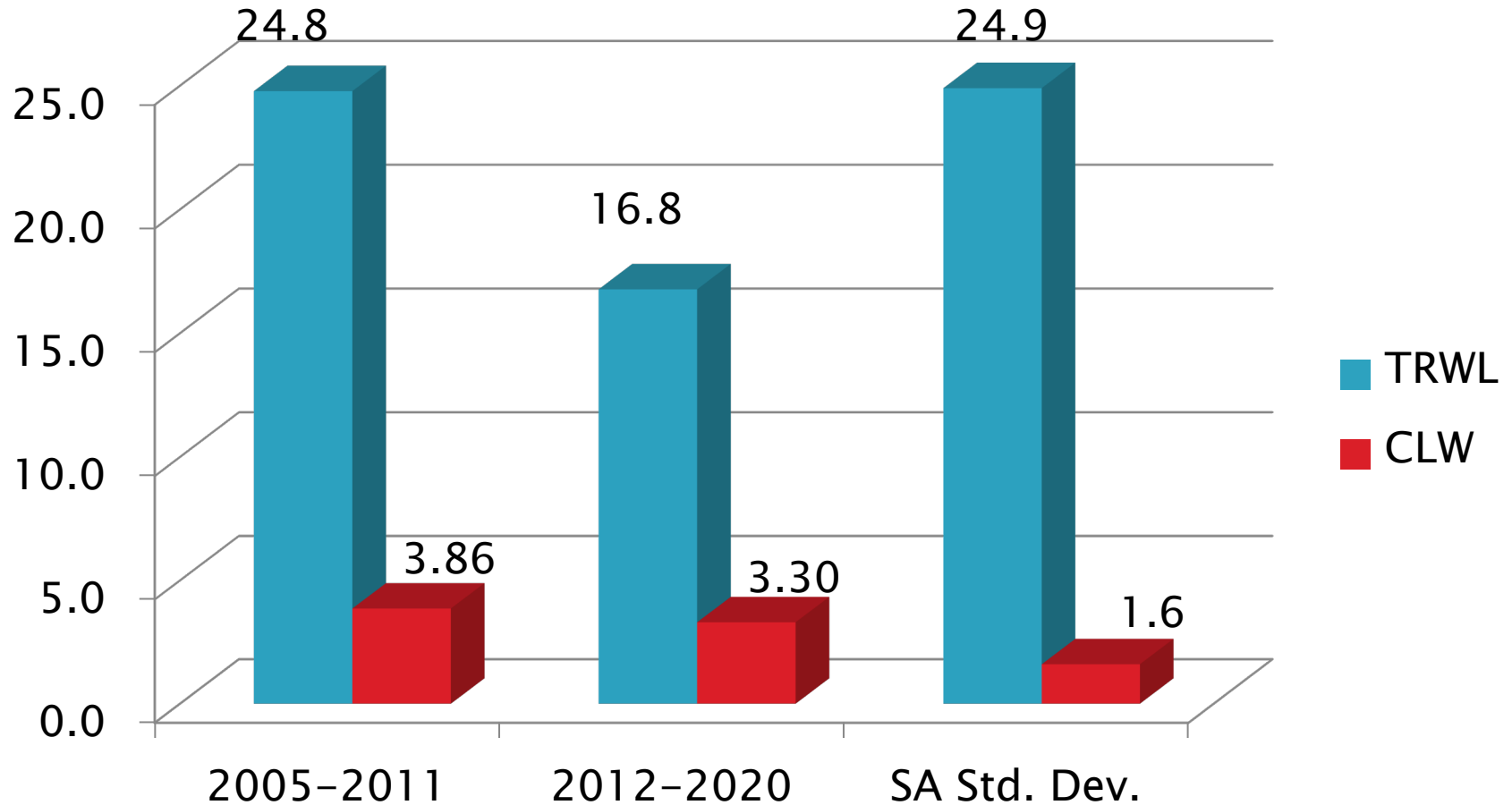
CUSUM Severity Analysis



T-12 Precision Estimates



T-12 Precision Estimates



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Mack T-12A

»» October 2021

T-12A Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	3
Failed Calibration Test	OC	1
Operationally Invalid	LC	1
Total		5

T-12A Failed Tests

Failed Parameter	Number of Tests
PB and PB2 Severe	1
Total	1

T-12A Lost Tests*

Status	Cause	#
Invalid	Missed soot window	1
Aborted	No aborted tests	0
Total		1

*Invalid and aborted tests

T-12A Test Severity

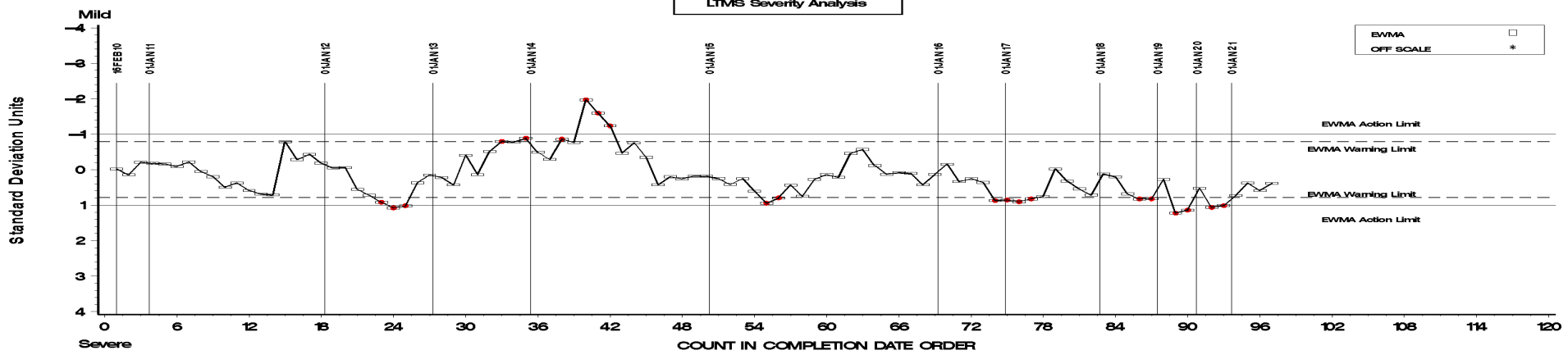
- ▶ MRV is in a precision warning alarm.

MACK T-12A INDUSTRY OPERATIONALLY VALID DATA

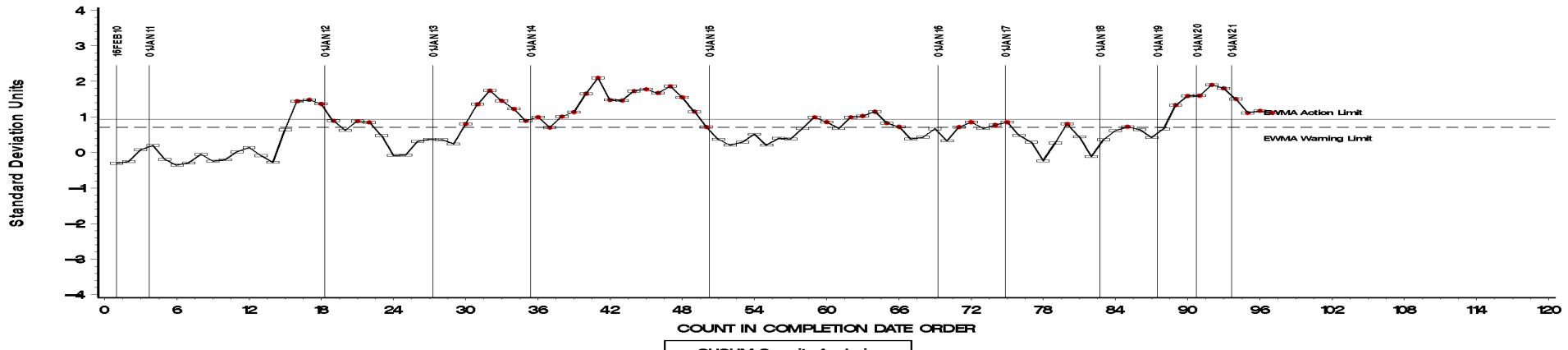


FINAL ORIGINAL UNIT MRV VISCOSITY [NM, SOLID, FROZEN, <, >]

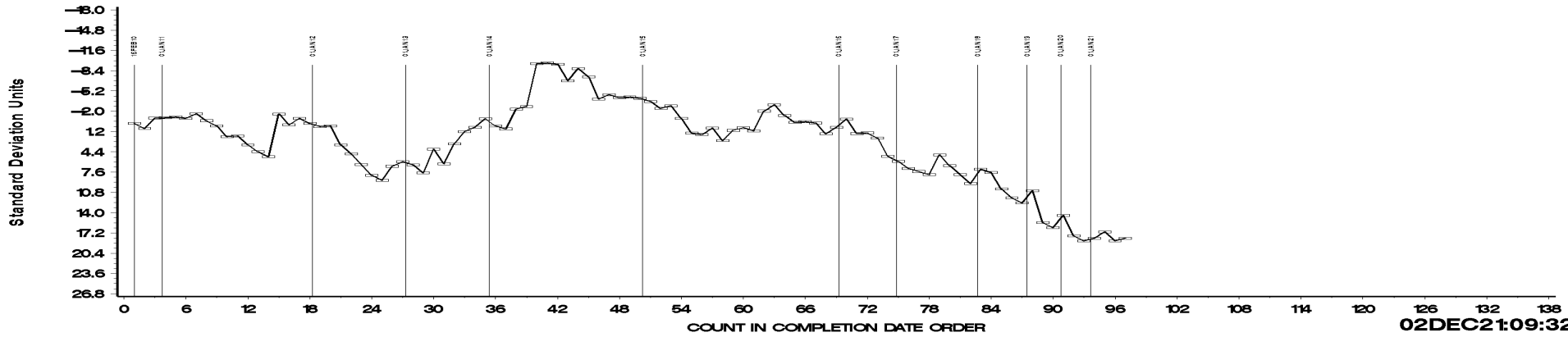
LTMS Severity Analysis



LTMS Precision Analysis

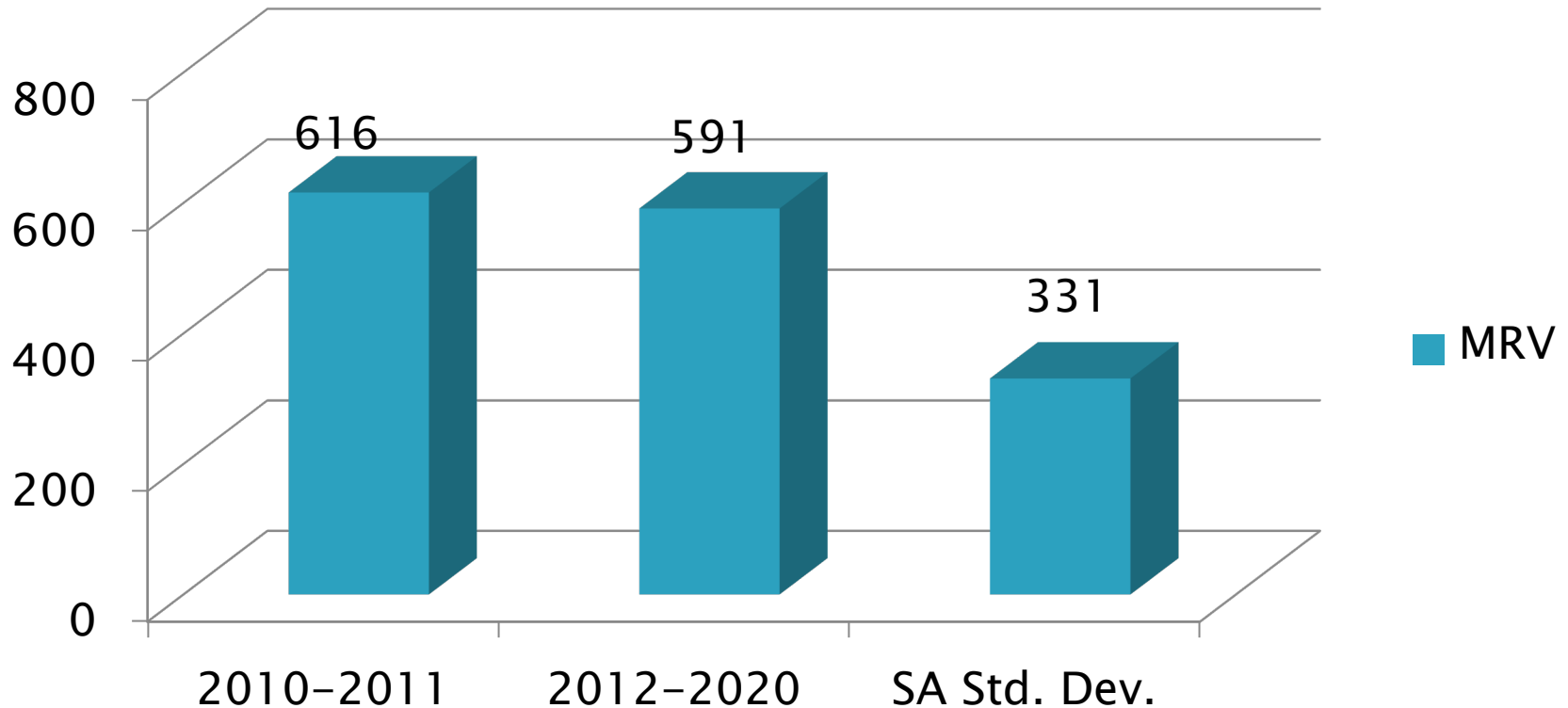


CUSUM Severity Analysis



T-12A Precision Estimates

MRV



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Mack T-13

»» October 2021

T-13 Test Activity

Test Status	Validity Code	#
Acceptable Calibration Test	AC	5
Failed Calibration Test	OC	1
Operationally Invalid	LC	0
Aborted	XC	0
Total		6

T-13 Failed Tests

Failed Parameter	Number of Tests
KV40, IRPH Mild	1
Total	1

T-13 Lost Tests*

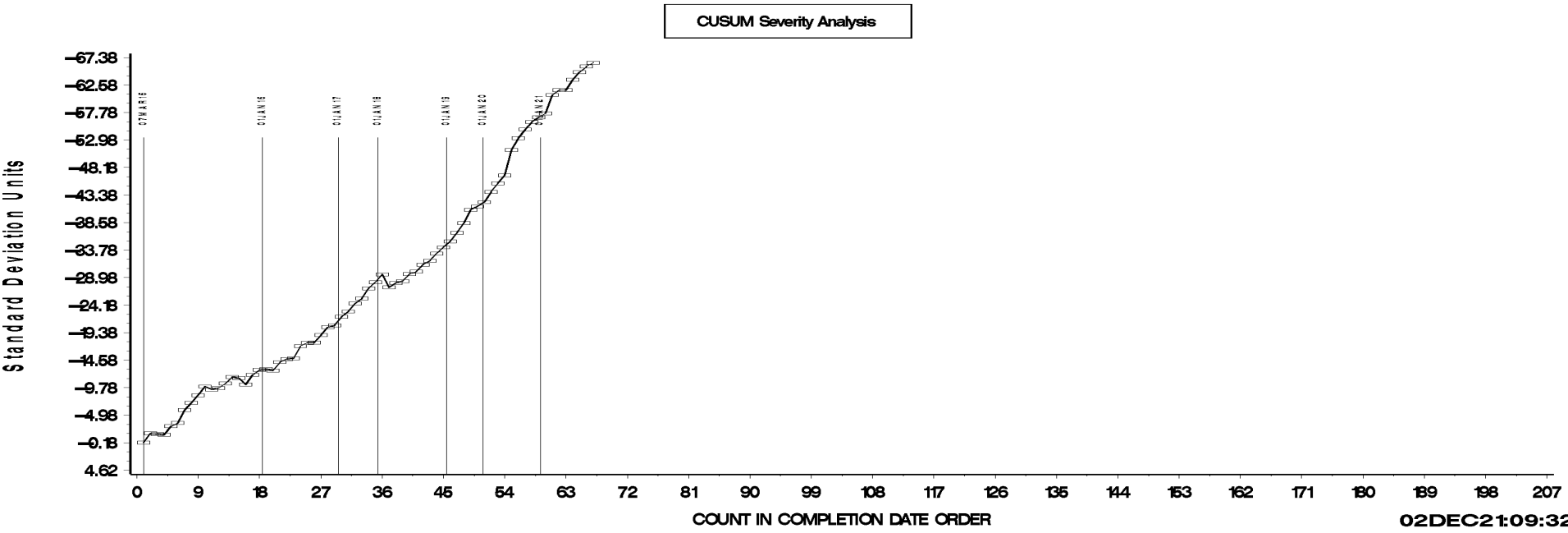
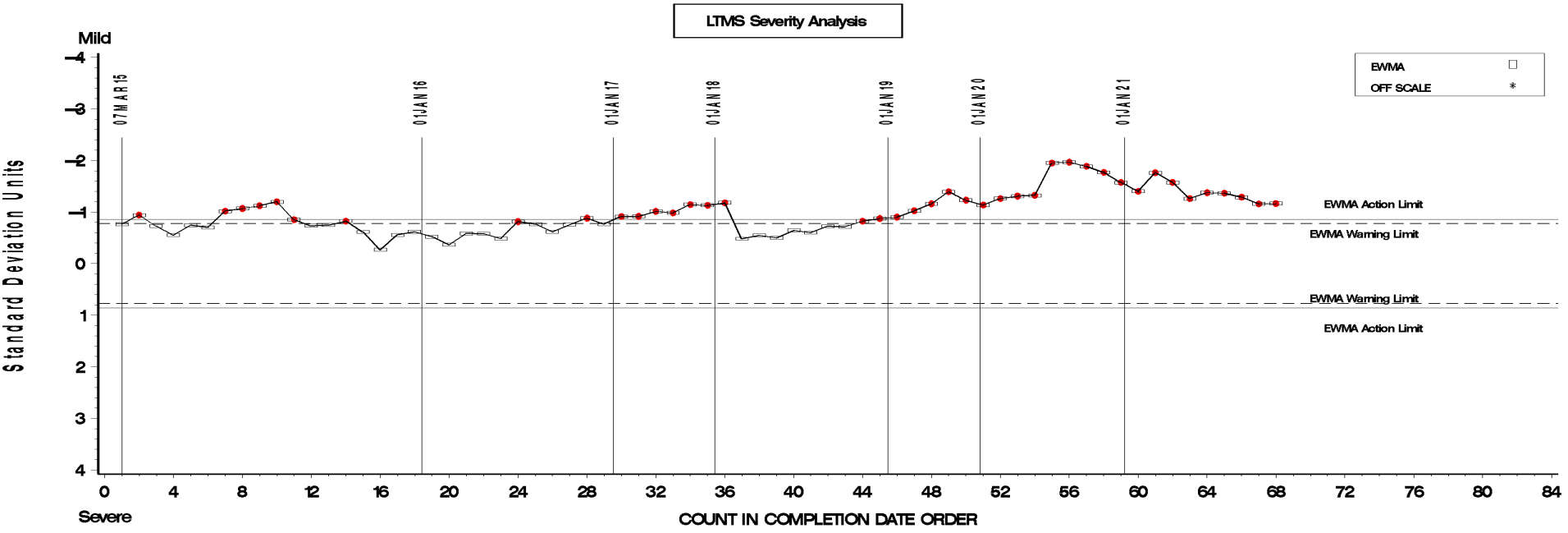
Status	Cause	#
Invalid	No invalid tests	0
Aborted	No aborted tests	0
Total		0

*Invalid and aborted tests

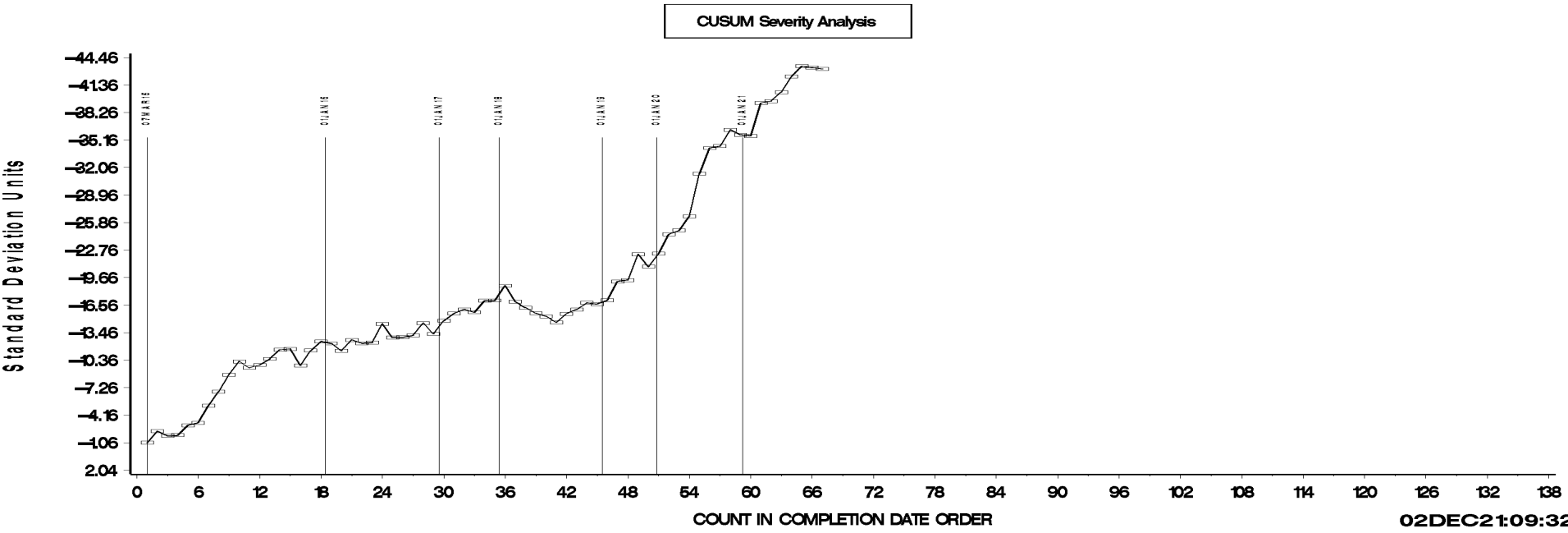
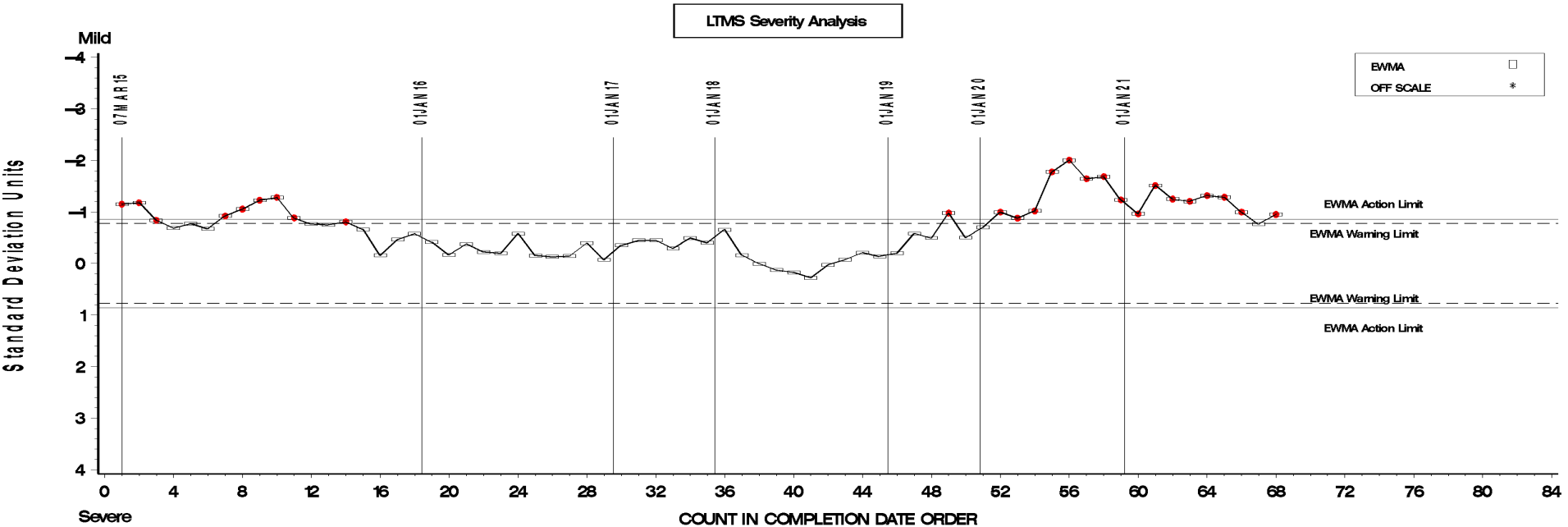
T-13 Test Severity

- ▶ IRPH and KV40 are in level 2 Zi alarm in the mild direction

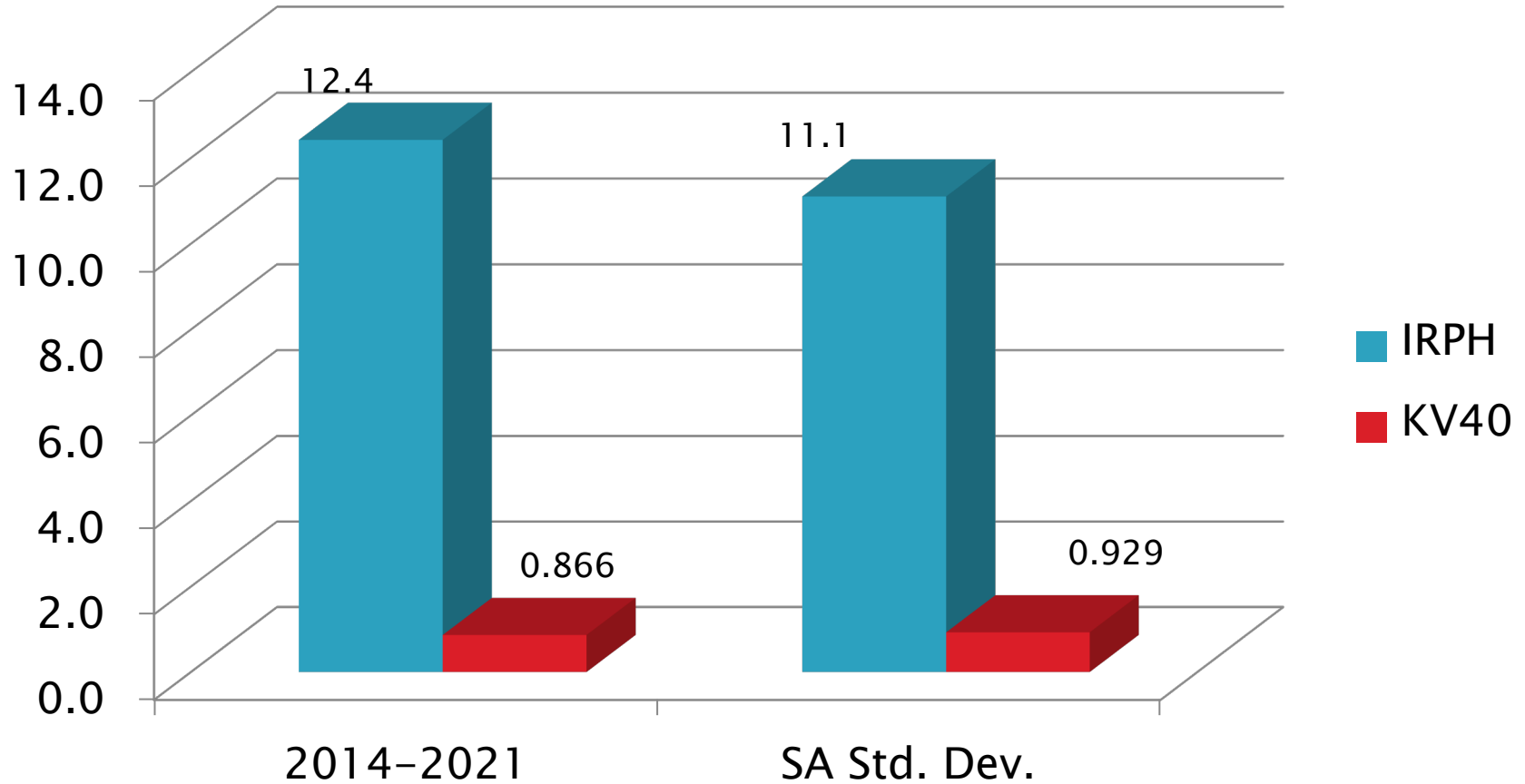
FNL. ORIG. UNIT KINEMATIC VISCOSITY AT 40 DEG C % CHANGE 300-360 HRS



FINAL ORIGINAL PEAK HEIGHT IR AT EOT



T-13 Precision Estimates



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Information Letters

»» April 1, 2021 –

September 30, 2021

Information Letters*

Test	Date	IL	Topic
ISB	4/26/2021	21-1	Removal of 9 Month Requirement on Stand Instrumentation Calibrations
ISM	4/26/2021	21-1	Removal of 9 Month Requirement on Stand Instrumentation Calibrations
T8	4/27/2021	21-1	Alternate Fuel Supplier Approval Procedure
ISB	6/21/2021	21-2	Alternate Fuel Supplier Approval Procedure
T13	7/20/2021	21-1	Alternate Fuel Supplier Approval Procedure
T12	9/23/2021	21-1	WXYPD Hardware Correction Factors Update

*Available from TMC Website

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Test Monitoring Center
<https://www.astmtmc.org>



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Memos

»» April 1, 2021 –
September 30, 2021

Memos*

Date	Number	Topic
N/A	N/A	No memos were issued during the period

*Available from TMC Website

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Reference Oil Inventory

»» Actions, Re-blends, Inventories
and Estimated Life

Reference Oil Reblends

- ▶ Re-blend of T13 reference oil 823 received. Introduction for reference testing not yet finalized.
- ▶ Re-blend of 1005 secured for EOAT/COAT equivalency matrix testing.

Reference Oil Inventory Estimated Life

Oil	Tests	Original Blend Amount	Quantity Shipped in last 6 months	TMC Inventory	Lab Inventory	Estimated Life
809-1	1K, 1N	9134	30	1948	116	5+ years
811-2	1K, 1N	1732	20	802	30	5+ years
821-4	T-12	4495	245	2225	195	5+ years
822-2	1R, T-11	4386	280	1945	168	3+ years
823	T-13	1796	200	229	120	<1 year
823-1	T-13	1421	0	1421	0	5+ years
830-3	ISM	2891	125	2437	125	5+ years
831-4	C13, ISB	1699	215	877	155	2 years

Reference Oil Inventory Estimated Life

Oil	Tests	Original Blend Amount	Quantity Shipped in last 6 months	TMC Inventory	Lab Inventory	Estimated Life
832-1	COAT	1951	56	1384	56	4+ years
833-1	COAT	1248	196	579	84	1.5 years
864-1	DD13	1576	100	641	125	1.5 years
873-2	1M-PC	1650	0	6	10	1 year
1005-5	1P, 1R, EOAT, RFWT, T-8/E	3826	212	1094	179	1 year

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LTMS Deviations

»» April 1, 2021 –

September 30, 2021

LTMS Deviations

- No LTMS Deviations in Current Period

Historical Count of HD LTMS Deviations

Test	LTMS Deviations
1M-PC	2
1N	2
T-8/E	2
T-10A	1
T-12	1

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Quality Index Deviations

»» April 1, 2021 –

September 30, 2021

Quality Index Deviations

- ▶ T12 Inlet Air and Intake Manifold Temperature
 - Control issue caused by failing controller.

Quality Index Deviations

Historical Count of HD Quality Index Deviations

Test	Qi Deviations
1P	15
1R	1
ISM	3
C13	2
T-10A	1
T-11	3
T-12	8
T-13	3
COAT	4

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TMC Laboratory Visits

»» April 1, 2021 –

September 30, 2021

TMC Lab Visits

- ▶ No lab visits this period due to pandemic.

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Test Area Timelines

»» April 1, 2021 –

September 30, 2021

Test Area Timeline Additions*

Test	Date	IL/Memo	Topic
ISM	4/26/2021	21-1	Removal of 9 Month Requirement on Stand Instrumentation Calibrations
ISB	4/26/2021	21-1	Removal of 9 Month Requirement on Stand Instrumentation Calibrations
T12	9/23/2021	21-1	WXYPD Hardware Correction Factors Update

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*As of 9/30/2021

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Rating Workshop Data



2020 Heavy Duty Workshop

Rating Workshop Data

- ▶ The 2021 HD Rating Workshop was cancelled due to the COVID-19 pandemic.

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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
 - Test Area Alarm Logs
 - Complete Test Area Timelines
 - LTMS Manual
- ▶ <https://www.astmtmc.org/>

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