Report Forms
Sequence VIII Engine Evaluation of Engine Oils

Form 1

Version VIII VERSION 20030815 BETA
Conducted For

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

C	V = Valid
	I = Invalid

CC	NR = Non-reference oil
	RO = Reference oil

Test Number			
Test Stand	Power Section	Number of Runs on Power Section Since Calibration Test	Total Runs on Power Section
CCCCC	CCCCCC	CCC	CCCCC
Date Completed: YYYYMMDD		Completion Time: HH:MM	
Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC			
Formulation/Stand Code: CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC			
Alternate Codes:	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC

In my opinion this test CCCCCCCC been conducted in a valid manner in accordance with the Sequence VIII Test Method D6709 and the appropriate amendments through the Information Letter System. The remarks included in this report describe anomalies associated with this test.

SUBMITTED BY:

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Testing Laboratory

Signature Image
Signature

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Typed Name

CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Title

Form 2

Sequence VIII Engine Evaluation of Engine Oils

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Sequence VIII Engine Evaluation of Engine Oils
Form 3
Summary of Test Method

The Sequence VIII test is designed to evaluate crankcase lubricating oils for their copper and lead corrosion control capabilities. It also evaluates shear stability under high temperature operating conditions.

The Sequence VIII involves steady state operation of the single cylinder CLR oil evaluation engine. After a 4-hour break-in and a 1/2-hour flush, the engine is operated under constant speed, air-fuel ratio and fuel flow conditions for an additional 40 hours. Prior to each run, the engine is thoroughly cleaned, and pertinent measurements of the engine parts are taken. A new piston, piston rings, and copper/lead connecting rod bearing are installed. The cylinder head is also reconditioned.

The key operating conditions for this procedure are as follows:

Parameter	**Set Point**
Duration	40 h
Speed	3150 ± 25 r/min
Load	Adjusted to provide proper fuel flow at the specified Air-to-Fuel Ratio
Fuel Flow	2.25 ± 0.11 kg/h
Air-to-Fuel Ratio	13.43 ± 0.5
Engine Jacket Out Coolant Temperature	93.5 ± 1°C
Engine Jacket Coolant Temperature Delta	5.6 ± 1°C
Gallery Oil Temperature	135.0 or 143.5 ± 1°C[B]
Crankcase Off Gas	850 ±28 SCL/h[A]

[A] Controlled by adding sufficient ambient air to rocker box to achieve an Off Gas Flow of 30 ft^3/h
[B] 135°C for SAE 5W, 10W; 143.5°C for SAE 20,30,40,50 and multi-viscosity grade oils.

This test utilizes an unleaded fuel named "KA24E" which has a green identifying dye. It is supplied by Haltermann Products.

At the conclusion of the test, the engine is disassembled and the performance of the oil being tested is judged by the following:
1) By the weight loss of the copper/lead big end connecting rod bearing.
2) By periodic oil sample analysis.

Sequence VIII Engine Evaluation of Engine Oils
Form 4
Test Results

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Date Completed	YYYYMMDD		Time Completed	HH:MM	
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC				

SAE Viscosity	CCCCCCC	Oil Temperature (135.0° or 143.5°C)	S12345.1
Laboratory Oil Code	CCCCCCCCCCCCCCCCCC	Date Started	YYYYMMDD
Test Fuel Type	CCCCCCCCCCCCCCCC	Time Started	HH:MM
Test Fuel Lot	CCCCCCC	Bearing Batch No.	CCCCC
Bearing Oil Storage Lead, ppm[A]	S12	Bearing Lot	CC
Test Length	S1234	Industry Reference Oil Code[A]	CCCCCC

Bearing Weight Loss Summary	
Test Length @ Measurement, hours	CCC
Top Bearing Half, mg	S123.1
Bottom Bearing Half, mg	S123.1
Total, mg	S123.1
Industry Correction Factor	S123.1
Severity Adjustment (non-reference tests only)	S123.1
Final Bearing Weight Loss, mg	S123.1

Hours	**Viscosity cSt @ 40°C**	**Viscosity cSt @ 100°C**	**Stripped Viscosity cSt @100°C**
New Oil	S123.12	S123.12	
10	S123.12	S123.12	AAAAAA

Test Stand/Power Section Reference History					
Stand No.	CCCCC	Power Section No.	CCCCCC	Runs on Power Section	CCCCC
Bearing Batch No.		CCCCC		Bearing Lot No.	CC
Industry Reference Oil Code		CCCCCC		Stripped Viscosity, cSt	AAAAAA
Completion Date		YYYYMMDD		Completion Time	HH:MM
Total Bearing Weight Loss, mg		S123.1		Final Bearing Weight Loss, mg	S123.1
Oil Code	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				

[A] Reference Oil Tests Only

Sequence VIII Engine Evaluation of Engine Oils
Form 5
Operational Summary

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Date Completed	YYYYMMDD	Time Completed	HH:MM		
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC				

Test Parameter	Specification	Minimum	Maximum	Average
Speed, r/min	3150 ± 25	S1234.1	S1234.1	S1234.1
Air-to-Fuel Ratio	13.43 ± 0.5	S123.1	S123.1	S123.1
Fuel Flow, kg/h	2.25 ± 0.11	S1.12	S1.12	S1.12
Output, W	Record	S1234.1	S1234.1	S1234.1
Oil Heater Input, W (optional)	Record	S1234.1	S1234.1	S1234.1
Crankcase Off Gas, L/h	850 ± 28	S1234	S1234	S1234
Temperatures	**Specification**	**Minimum**	**Maximum**	**Average**
Gallery Oil[A], °C	143.5 or 135.0 ± 1	S123.1	S123.1	S123.1
Coolant In, °C	Record	S123.1	S123.1	S123.1
Coolant Out, °C	93.5 ± 1	S123.1	S123.1	S123.1
Coolant Delta, °C	5.6 ± 1	S12.1	S12.1	S12.1
Intake Air, °C	Record	S123.1	S123.1	S123.1
Pressures	**Specification**	**Minimum**	**Maximum**	**Average**
Oil, kPa	276 ± 14	S12345	S12345	S12345
Intake Manifold Vacuum, kPa	Record	S1.1	S1.1	S1.1
Exhaust, kPa	0 to 3.4	S1.1	S1.1	S1.1
Crankcase Vacuum, kPa	0.50 ± 0.12	S12.12	S12.12	S12.12
Spark Advance, °BTDC	35 ± 1	S12	S12	S12
Blowby, L/h	Record	S123.1	S123.1	S123.1

Oil Consumption[B]	Initial Oil Charge (ml)	New Oil Added (ml)	Oil Samples (ml)	Final Oil Drain (ml)
	S12345	S12345	S12345	S12345
			Total Oil Consumption:	S12345

[A] 135°C for SAE 5W, 10W; 143.5°C for SAE 20,30,40,50 and multi-viscosity grade oils.
[B] Total Oil Consumption = (Initial Oil Charge + New Oil Added) – (Oil Samples + Final Oil Drain)

Sequence VIII Engine Evaluation of Engine Oils
Form 6
Parts Measurement and Critical Parts Listing

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	
Date Completed	YYYYMMDD	Time Completed	HH:MM	
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC			
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC			

Power Section Measurements, mm				
Measurement	**Specification**	**Minimum**	**Maximum**	**Average**
Valve Stem Clearance in Guide, Inlet	0.0508 – 0.1016	S1.1234	S1.1234	S1.1234
Valve Stem Clearance in Guide, Exhaust	0.0762 – 0.1270	S1.1234	S1.1234	S1.1234
Connecting Rod Bearing Clearance	0.0610 – 0.0762	S1.1234	S1.1234	S1.1234
Main Bearing Clearance, Front	0.0508 – 0.0762	S1.1234	S1.1234	S1.1234
Main Bearing Clearance, Rear	0.0508 – 0.0762	S1.1234	S1.1234	S1.1234
Connecting Rod Journal Out-of-Round	0.0254 Maximum		S1.1234	

Runs on Liner	S12	Liner may be used as long as the piston-to-liner clearance is in the specified range.
Piston to Liner Clearance	S1.1234	0.0305 to 0.0635 mm

Critical Parts Listing	
Parts	**ID Code**
Crankshaft	CCCCCCCCCC
Camshaft	CCCCCCCCCC
Main Bearings	CCCCCCCCCC
Camshaft Bearings	CCCCCCCCCC
Connecting Rod	CCCCCCCCCC
Piston	CCCCCCCCCC
Cylinder Liner	CCCCCCCCCC

Sequence VIII Engine Evaluation of Engine Oils
Form 7
Downtime Occurrences and Other Comments

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Date Completed	YYYYMMDD	Time Completed	HH:MM
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC		

Number of Downtime Occurrences	S1		
Test Hours	**Date**	**Downtime**	**Reasons**
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
		HHH:MM	**Total Downtime**

Other Comments	
Number of Comment Lines	S1
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	
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Sequence VIII Engine Evaluation of Engine Oils
Form 7A
Downtime Occurrences and Other Comments

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	
Date Completed	YYYYMMDD	Time Completed		HH:MM
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC			
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC			

Number of Downtime Occurrences			S1	
Test Hours	**Date**	**Downtime**	**Reasons**	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
CCCCCC	CCCCCCCC	CCCCCC	ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc	
		HHH:MM	**Total Downtime**	

Other Comments		
Number of Comment Lines	S1	
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
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Sequence VIII Engine Evaluation of Engine Oils
Form 7B
Downtime Occurrences and Other Comments

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Date Completed	YYYYMMDD	Time Completed	HH:MM
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC		

Number of Downtime Occurrences		S1	
Test Hours	**Date**	**Downtime**	**Reasons**
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCC	CCCCCCCC	CCCCCC	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
		HHH:MM	**Total Downtime**

Other Comments		
Number of Comment Lines	S1	
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
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Sequence VIII Engine Evaluation of Engine Oils
Form 8
Operational Outlier Occurrences

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Date Completed	YYYYMMDD	Time Completed	HH:MM
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC		

Number of Operational Outlier Occurrences: S12					
Test Hours	**Parameter**	**Parameter Range**	**Reading**	**Time Out**	**Deviation Percentage**
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC

Sequence VIII Engine Evaluation of Engine Oils
Form 8A
Operational Outlier Occurrences

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Date Completed	YYYYMMDD	Time Completed	HH:MM
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC		

Number of Operational Outlier Occurrences: S12					
Test Hours	**Parameter**	**Parameter Range**	**Reading**	**Time Out**	**Deviation Percentage**
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC

Sequence VIII Engine Evaluation of Engine Oils
Form 8B
Operational Outlier Occurrences

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Date Completed	YYYYMMDD		Time Completed	HH:MM	
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC				

Number of Operational Outlier Occurrences: S12

Test Hours	Parameter	Parameter Range	Reading	Time Out	Deviation Percentage
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC
CCCCC	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCCCCCCC	CCCCC	CCCCCC

Sequence VIII Engine Evaluation of Engine Oils
Form 9
Deviation of Operational Parameters

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Date Completed	YYYYMMDD	Time Completed	HH:MM
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC		

Primary Parameter	Maximum Permitted Deviation Percentage	Calculated Total Deviation Percentage
Engine Oil Gallery Temperature	2.5%	S123.1
Engine Coolant Outlet Temperature	2.5%	S123.1
Engine Coolant Temperature Delta	2.5%	S123.1
Fuel Flow	2.5%	S123.1
Crankcase Off Gas	2.5%	S123.1
Oil Pressure	2.5%	S123.1
Secondary Parameter		
Engine Speed	5%	S123.1
Air-to-Fuel Ratio	5%	S123.1
Spark Advance	5%	S123.1
Exhaust Pressure	5%	S123.1
Crankcase Vacuum	5%	S123.1

Sequence VIII Engine Evaluation of Engine Oils
Form 10
Data Acquisition System Details

Laboratory	CC	Oilcode	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Date Completed	YYYYMMDD	Time Completed	HH:MM
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC		
Formulation/Stand	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC		

Parameter (1)	Sensing Device (2)	Calibration Frequency (3)	Record Device (4)	Observation Frequency (5)	Record Frequency (6)	Log Frequency (7)	System Response (8)
TEMPERATURES							
Oil Gallery	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC
Coolant Out	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC
Coolant Delta	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC
OTHER							
Fuel Flow	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC
Engine Speed	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC
Air-to-Fuel Ratio	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC
Exhaust Pressure	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC
Crankcase Off Gas	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC
Oil Pressure	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC
Crankcase Vacuum	CCCCCCCCCCCCCCC	CCCCCCCCCCCCCCC	CCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCCCCCC	CCCCCCCC

LEGEND:
(1) OPERATING PARAMETER
(2) THE TYPE OF DEVICE USED TO MEASURE TEMPERATURE, PRESSURE OR FLOW
(3) FREQUENCY AT WHICH THE MEASUREMENT SYSTEM IS CALIBRATED
(4) THE TYPE OF DEVICE WHERE DATA IS RECORDED
LG -HANDLOG SHEET
DL -AUTOMATIC DATA LOGGER
SC - STRIP CHART RECORDER
CIM - COMPUTER, USING MANUAL DATA ENTRY
C/D -COMPUTER, USING DIRECT I/O ENTRY
(5) DATA ARE OBSERVED BUT ONLY RECORDED IF OFF SPEC
(6) DATA ARE RECORDED BUT ARE NOT RETAINED AT EOT
(7) DATA ARE LOGGED AS PERMANENT RECORD, NOTE SPECIFY IF:
SS -SNAPSHOT TAKEN AT SPECIFIED FREQUENCY
AG/X AVERAGE OF X DATA POINTS AT SPECIFIED FREQUENCY
(8) TIME FOR THE OUTPUT TO REACH 63.2% OF FINAL VALUE FOR STEP CHANGE AT INPUT
(9) SEE ANNEX AII FOR PROCEDURE TO DETERMINE SYSTEM RESPONSE OF THE CHARACTERISTICS OF THE ACQUISITION SYSTEM.

Sequence VIII Engine Evaluation of Engine Oils
Form 11

American Chemistry Council Code of Practice
Test Laboratory Conformance Statement

Test Laboratory	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				
Test Sponsor	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				
Formulation / Stand Code	CC-CCCCCCCCCC-C-C-CCCCCC-CC-CC-CCCCC				
Test Number	CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC				
Start Date	YYYYMMDD	Start Time	HH:MM	Time Zone	CCC

Declarations

No. 1 All requirements of the ACC Code of Practice for which the test laboratory is responsible were met in the conduct of this test. Yes ___C___ No___C___ *

No. 2 The laboratory ran this test for the full duration following all procedural requirements; and all operational validity requirements of the latest version of the applicable test procedure (ASTM or other), including all updates issued by the organization responsible for the test, were met.
Yes ___C___ No___C___*

If the response to this Declaration is "No", does the test engineer consider the deviations from operational validity requirements that occurred to be beyond the control of the laboratory? Yes ___C___* No___C___

No 3. A deviation occurred for one of the test parameters identified by the organization responsible for the test as being a special case. Yes ___C___* No___C___ *(This currently applies only to specific deviations identified in the ASTM Information Letter System)*

Check The Appropriate Conclusion

C	Operational review of this test indicates that the results should be included in the Multiple Test Acceptance Criteria calculations.
C	*Operational review of this test indicates that the results should not be included in the Multiple Test Acceptance Criteria calculations.

Note: *Supporting comments are required for all responses identified with an asterisk.*

Comments
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