

REPORT ON SEQUENCE VG EVALUATION

CONDUCTED FOR

CC
 CCC

C	V = VALID
	I = INVALID
	N = RESULTS CAN NOT BE INTERPRETED AS REPRESENTATIVE OF OIL PERFORMANCE (NON-REFERENCE OIL) AND SHALL NOT BE USED IN DETERMINING AN AVERAGE TEST RESULT USING MULTIPLE TEST ACCEPTANCE CRITERIA.

CC	NR = Non-reference Oil Test
	RO = Reference Oil Test

Test Number			
Test Stand: CCCCC	Runs Between Calibration Tests: CCCC	Total Runs on Test Stand: CCCCC	
Date Completed: YYYYMMDD	End of Test Time: HH:MM		
Oil Code: CCC			
Formulation/Stand Code: CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCCC			
Alternate Codes:	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC	CCCCCCCCCCCCCCCC

In my opinion this test CCCCCC been conducted in a valid manner in accordance with the VG Test Procedure (RR:) and the appropriate amendments through the Information Letter system. The remarks included in the report describe the anomalies associated with this test.

SUBMITTED BY: _____
 Testing Laboratory

Signature Image
 Signature

 Typed Name

 Title

**SEQUENCE VG
FORM 4
TEST RESULT SUMMARY
NON-REFERENCE & REFERENCE OIL TESTS**

Laboratory: <i>CC</i>	Stand: <i>CCCCC</i>	Stand Runs: <i>CCCC</i>	Oil Code: <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>
Date Started: <i>YYYYMMDD</i>	Time Started: <i>HH:MM</i>	Date Completed: <i>YYYYMMDD</i>	Time Completed: <i>HH:MM</i>
Formulation/Stand Code: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC</i>			

Lab Engine Number: <i>CCCCCC</i>	SAE Viscosity: <i>CCCCCC</i>
Test Length: <i>S1234</i>	Fuel Batch: <i>CCCCCC</i>
Industry Oil Code: <i>CCCCCC</i>	

CRITICAL PARAMETERS						
	Average Engine Sludge, merits	Rocker Cover Sludge, merits	Average Engine Varnish, merits	Average Piston Skirt Varnish, merits	Oil Screen Sludge, % Area	Number of Hot Stuck Rings
Original Result	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S123</i>	<i>S1</i>
Transformed Result					<i>S1.1234</i>	
Industry Correction Factor	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S1.1234</i>	<i>S1</i>
Corrected Transformed Result					<i>S1.1234</i>	
Severity Adjustment	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S1.1234</i>	<i>S1</i>
Final Transformed Result					<i>S1.1234</i>	
Final Original Unit Result	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>

Clogging Information		Additional Information	
Oil Screen Debris, % Area	<i>S123</i>	Number of Cold Stuck Rings	<i>S1</i>
Oil Ring Clogging, % Area	<i>S123</i>	Average Blowby Stage II, L/min	<i>S12.12</i>
PCV Valve @ 25 kPa, %	<i>S12.12</i>	Oil Consumption, grams	<i>S123456</i>
PCV Valve @ 60 kPa, %	<i>S12.12</i>		

Last Reference Oil Test Calibrating Stand Information - Fill Out For Non-reference Oil Tests Only						
Stand: <i>CCCCC</i>	Total Runs on Test Stand: <i>CCCCC</i>	Oilcode: <i>CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC</i>				
Industry Oil Code: <i>CCCCCC</i>	Engine Number: <i>CCCCCC</i>	SAE Viscosity: <i>CCCCCC</i>	Date Completed: <i>YYYYMMDD</i>			
Test Length: <i>S1234</i>	Fuel Batch: <i>CCCCCC</i>	Calibration Expiration Date: <i>YYYYMMDD</i>				
Clogging Information		Additional Information				
Oil Screen Debris, % Area	<i>S123</i>	Number of Cold Stuck Rings		<i>S1</i>		
Oil Ring Clogging, % Area	<i>S123</i>	Average Blowby Stage II, L/min		<i>S12.12</i>		
PCV Valve @ 25 kPa, %	<i>S12.12</i>	Oil Consumption, grams		<i>S123456</i>		
PCV Valve @ 60 kPa, %	<i>S12.12</i>					
	Average Engine Sludge, merits	Average Rocker Cover Sludge, merits	Average Engine Varnish, merits	Average Piston Skirt Varnish, merits	Oil Screen Sludge, % Area	Number of Hot Stuck Rings
Final Original Unit Result	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S12.12</i>	<i>S123</i>	<i>S1</i>

FIG A7.4 Test Result Summary

**SEQUENCE VG
FORM 5
TEST RESULT SUMMARY
NON-REFERENCE & REFERENCE OIL TESTS**

Laboratory: CC	Stand: CCCC	Stand Runs: CCCC	Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Date Started: YYYYMMDD	Time Started: HH:MM	Date Completed: YYYYMMDD	Time Completed: HH:MM
Formulation/Stand Code: CC-CCCCCCCCCC-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C-C			

Hardware Identification	Production Number CCCCCCCCCCCCCC	Serial Number CCCCCCCCCCCCCC	
Casting Numbers	Block CCCCCCCCCCCCCC	Cam, Left CCCCCCCCCCCCCC	Cam, Right CCCCCCCCCCCCCC
Piston Part Number CCCCCCCCCCCCCC	Piston Ring Casting Number CCCCCCCCCCCCCC		
Cylinder Head Casting Number	Left CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	Right CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC	

Sludge Deposits	
Area	Merit
Rocker Arm Cover, Left	SI.12
Rocker Arm Cover, Right	SI.12
Camshaft Baffle, Left	SI.12
Camshaft Baffle, Right	SI.12
Timing Chain Cover	SI.12
Oil Pan Baffle	SI.12
Oil Pan	SI.12
Valve Deck Area, Left	SI.12
Valve Deck Area, Right	SI.12
Average Engine Sludge	SI.12

Varnish Deposits	
Area	Merit
Piston Skirt, Thrust	SI.12
Rocker Arm Cover, Left	SI.12
Rocker Arm Cover, Right	SI.12
Average Engine Varnish	SI.12

Wear Measurements		
Ring Wear	Units	Value
Follower Pin Wear, cyl #8, Intake.	µm	SI23.1
Follower Pin Wear, cyl #8, Exhaust.	µm	SI23.1
Cylinder Bore Wear, cyl #1 & #8 Max.	µm	SI23.1
Cylinder Bore Wear, cyl #1 & #8 Avg.	µm	SI23.1
Ring Gap Increase, cyl #1 & #8, Max	µm	SI23.1
Ring Gap Increase, cyl #1 & #8, Avg	µm	SI23.1

Piston Varnish Deposits, Thrust Side	
Piston Number	Merit
1	SI.12
2	SI.12
3	SI.12
4	SI.12
5	SI.12
6	SI.12
7	SI.12
8	SI.12
Average	SI2.12

FIG A7.5 Deposit Breakdown

**SEQUENCE VG
FORM 6
OPERATIONAL SUMMARY**

Laboratory: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM	
Stand: CCCC	Stand Runs: CCCC	Total Runs on Stand: CCCC	Oil Code: CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
Formulation/Stand Code: CC-C-CCCCCCCC-C-C-CCCCC-CC-CC-CCCC			

Parameter	Units	QI Threshold	EOT QI	Target			Average			Samples	BQD	Over/Under Range
				Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3			
Speed	r/min	0.000	S12.123	1200	2900	700	S1234	S1234	S1234	S12345	S12345	S12345
Manifold Abs Press	kPa	0.000	S12.123	69	66	Record	S12.1	S12.1	S12.1	S12345	S12345	S12345
Engine Oil, In	°C	0.000	S12.123	68	100	45	S123.1	S123.1	S123.1	S12345	S12345	S12345
Engine Coolant, Out	°C	0.000	S12.123	57	85	45	S12.1	S12.1	S12.1	S12345	S12345	S12345
Engine Coolant Flow	L/min	0.000	S12.123	48	Record	Record	S123.1	S123.1	S123.1	S12345	S12345	S12345
Engine Coolant Pressure	kPa	0.000	S12.123	70	70	70	S123.1	S123.1	S123.1	S12345	S12345	S12345
RAC Coolant, In	°C	0.000	S12.123	29	85	29	S12.1	S12.1	S12.1	S12345	S12345	S12345
RAC Flow	L/min	0.000	S12.123	15	15	15	S12.1	S12.1	S12.1	S12345	S12345	S12345
Intake Air	°C	0.000	S12.123	30	30	30	S12.1	S12.1	S12.1	S12345	S12345	S12345
Intake Air Pressure	kPa	0.000	S12.123	0.05	0.05	0.05	S1.123	S1.123	S1.123	S12345	S12345	S12345
Intake Air Humidity	g/kg	0.000	S12.123	11.4	11.4	11.4	S12.1	S12.1	S12.1	S12345	S12345	S12345
Exhaust Backpressure	kPa	0.000	S12.123	104	107	Record	S123.1	S123.1	S123.1	S12345	S12345	S12345
Parameter	Units	Specifications										
Fuel Flow	kg/h			Record	Record	Record	S12.1	S12.1	S12.1			
Blowby	L/min			Record	60-70							
Power	kW			Record	Record	1.10 to 1.50	S12.12	S12.12	S12.12			
Exhaust Gas												
Left Manifold O ₂	% Vol			1.0 Max	1.0 Max	3.0 Max	S1.12	S1.12	S1.12			
Right Manifold O ₂	% Vol			1.0 Max	1.0 Max	3.0 Max	S1.12	S1.12	S1.12			
Left Manifold CO	% Vol			1.0 Max	2.0 Max	8.5±1.5	S12.12	S12.12	S12.12			
Right Manifold CO	% Vol			1.0 Max	2.0 Max	8.5±1.5	S12.12	S12.12	S12.12			
Left Manifold CO ₂	% Vol			13.5-15.5	13.5-15.5	Record	S12.12	S12.12	S12.12			
Right Manifold CO ₂	% Vol			13.5-15.5	13.5-15.5	Record	S12.12	S12.12	S12.12			

FIG A7.6 Operational Summary

**SEQUENCE VG
FORM 6
OPERATIONAL SUMMARY**

Laboratory: CC	Date Completed: YYYYMMDD	Time Completed: HH:MM	
Stand: CCCCC	Stand Runs: CCCC	Total Runs on Stand: CCCCC	Oil Code: CCC
Formulation/Stand Code: CC-C-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC			

Parameter	Units	QI Threshold	EOT QI	Target			Average			Samples	BQD	Over/Under Range
				Stage 1	Stage 2	Stage 3	Stage 1	Stage 2	Stage 3			
Speed	r/min	0.000	S1234	1200	2900	700						
Manifold Abs Press	kPa	0.000		69	66	Record						
Engine Oil, In	°C	0.000		68	100	45						
Engine Coolant, Out	°C	0.000		57	85	45						
Engine Coolant Flow	L/min	0.000		48	Record	Record						
Engine Coolant Pressure	kPa	0.000		70	70	70						
RAC Coolant, In	°C	0.000		29	85	29						
RAC Flow	L/min	0.000		15	15	15						
Intake Air	°C	0.000		30	30	30						
Intake Air Pressure	kPa	0.000		0.05	0.05	0.05						
Intake Air Humidity	g/kg	0.000		11.4	11.4	11.4						
Exhaust Backpressure	kPa	0.000		104	107	Record						
Parameter	Units	Specifications										
Fuel Flow	kg/h	Record	Record	Record	Record	Record						
Blowby	L/min	Record	60-70				S12.12					
Power	kW	Record	Record	Record	Record	1.10 to 1.50						
Exhaust Gas												
Left Manifold O ₂	% Vol	1.0 Max	1.0 Max	1.0 Max	1.0 Max	3.0 Max						
Right Manifold O ₂	% Vol	1.0 Max	1.0 Max	1.0 Max	1.0 Max	3.0 Max						
Left Manifold CO	% Vol	1.0 Max	2.0 Max	2.0 Max	2.0 Max	8.5±1.5						
Right Manifold CO	% Vol	1.0 Max	2.0 Max	2.0 Max	2.0 Max	8.5±1.5						
Left Manifold CO ₂	% Vol	13.5-15.5	13.5-15.5	13.5-15.5	13.5-15.5	Record						
Right Manifold CO ₂	% Vol	13.5-15.5	13.5-15.5	13.5-15.5	13.5-15.5	Record						

FIG A7.6 Operational Summary

**SEQUENCE VG
FORM 7
OIL ADDITION RECORD & BLOWBY RATES
NON-REFERENCE & REFERENCE OIL TESTS**

Laboratory: <i>CC</i>	Stand: <i>CCCCC</i>	Stand Runs: <i>CCCC</i>	Oil Code: <i>cc</i>
Date Started: <i>YYYYMMDD</i>	Time Started: <i>HH:MM</i>	Date Completed: <i>YYYYMMDD</i>	Time Completed: <i>HH:MM</i>
Formulation/Stand Code: <i>CC-CCCCCCCCC-C-C-CCCCCC-CC-CC-CCCC</i>			

Cycle	Test Hour	Oil Added, g	Oil Consumed, g
6	23 h, 25 min	<i>S1234</i>	<i>S1234</i>
12	47 h, 25 min	<i>S1234</i>	<i>S1234</i>
18	71 h, 25 min	<i>S1234</i>	<i>S1234</i>
24	95 h, 25 min	<i>S1234</i>	<i>S1234</i>
30	119 h, 25 min	<i>S1234</i>	<i>S1234</i>
36	143 h, 25 min	<i>S1234</i>	<i>S1234</i>
42	167 h, 25 min	<i>S1234</i>	<i>S1234</i>
48	191 h, 25 min	<i>S1234</i>	<i>S1234</i>
54	215 h, 25 min		<i>S1234</i>
Total, g		<i>S123456</i>	<i>S123456</i>

Stage II	
Test Hours	Blowby, L/min
Break-in	<i>S12.12</i>
23	<i>S12.12</i>
47	<i>S12.12</i>
71	<i>S12.12</i>
95	<i>S12.12</i>
119	<i>S12.12</i>
143	<i>S12.12</i>
167	<i>S12.12</i>
191	<i>S12.12</i>
215	<i>S12.12</i>
Maximum	<i>S12.12</i>
Minimum	<i>S12.12</i>
Average Blowby, Hours 23 - 119	<i>S12.12</i>
Average	<i>S12.12</i>

FIG A7.7 Blowby and Oil Additions

**SEQUENCE VG
FORM 8
ANALYSIS OF OIL**

Laboratory: <i>CC</i>	Stand: <i>CCCC</i>	Stand Runs: <i>CCCC</i>	Oil Code: <i>cc</i>
Date Started: <i>YYYYMMDD</i>	Time Started: <i>HH:MM</i>	Date Completed: <i>YYYYMMDD</i>	Time Completed: <i>HH:MM</i>
Formulation/Stand Code: <i>CC-CCCCCCCCC-C-C-CCCCC-CC-CC-CCCC</i>			

Test Hours	Ag, ppm	Al, ppm	Cr, ppm	Cu, ppm	Fe, ppm	Pb, ppm	Si, ppm	Sn, ppm	Fuel Dilution by GC, Wt. % D3525	Pentane Insolubles, Wt. % D893B ^A	TBN D4739 ^A	Vis. @ 40°C, cSt D445	Vis. @ 100°C, cSt D445 ^A
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>			<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>		<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>
<i>CCC</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12345</i>	<i>S12.1</i>	<i>S1.12</i>	<i>S12.12</i>	<i>S123.12</i>	<i>S123.12</i>

^A Analyses not required by Test Method

