

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION ATTENTION

EPY [SAM] Machine Id VOLVO PENTA 7008565333 Component Starboard Diesel Engine Fluid

VOLVO PENTA SAE 15W40 (9 GAL)

RECOMMENDATION	Test	UOM	Method	Limit/Abn	Current	History1	History2
Oil and filter change at the time of sampling has been noted. Resample	Sample Number		Client Info		VPA061711		
at the next service interval to monitor.	Sample Date		Client Info		01 Jul 2024		
	Machine Age	hrs	Client Info		121		
	Oil Age	hrs	Client Info		0		
	Filter Age	hrs	Client Info		0		
	Oil Changed		Client Info		Changed		
	Filter Changed		Client Info		Changed		
	Sample Status				ATTENTION		
WEAR	Iron	ppm	ASTM D5185m	>80	23		
All component wear rates are normal.	Chromium	ppm	ASTM D5185m	>6	2		
	Nickel	ppm	ASTM D5185m	>2	1		
	Titanium	ppm	ASTM D5185m	>2	0		
	Silver	ppm	ASTM D5185m	>2	<1		
	Aluminum	ppm	ASTM D5185m	>20	6		
	Lead	ppm	ASTM D5185m	>95	<1		
	Copper	ppm	ASTM D5185m	>85	68		
	Tin	ppm	ASTM D5185m	>9	<1		
	Vanadium	ppm	ASTM D5185m		0		
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal	scalar	*Visual	NONE	NONE		
CONTAMINATION	Silicon	ppm	ASTM D5185m		27		
Fuel content negligible. There is no indication of any contamination in	Potassium	ppm	ASTM D5185m	>20	2		
the oil.	Fuel	%	ASTM D3524	>4.0	0.2		
	Water		WC Method	>0.1	NEG		
	Glycol		WC Method		NEG		
	Soot %	%	*ASTM D7844		0.9		
	Nitration	Abs/cm	******		~ ~		
			*ASTM D7624	>20	9.0		
	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.3		
	Sulfation Silt		*ASTM D7415 *Visual	>30 NONE	19.3 NONE		
	Sulfation Silt Debris	Abs/.1mm	*ASTM D7415	>30 NONE NONE	19.3 NONE NONE		
	Sulfation Silt	Abs/.1mm scalar	*ASTM D7415 *Visual	>30 NONE NONE NONE	19.3 NONE NONE NONE		
	Sulfation Silt Debris Sand/Dirt Appearance	Abs/.1mm scalar scalar	*ASTM D7415 *Visual *Visual *Visual *Visual	>30 NONE NONE NORML	19.3 NONE NONE NONE NORML		
	Sulfation Silt Debris Sand/Dirt Appearance Odor	Abs/.1mm scalar scalar scalar	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual	>30 NONE NONE NONE	19.3 NONE NONE NORE NORML NORML	 	
	Sulfation Silt Debris Sand/Dirt Appearance	Abs/.1mm scalar scalar scalar scalar	*ASTM D7415 *Visual *Visual *Visual *Visual	>30 NONE NONE NORML	19.3 NONE NONE NONE NORML	 	
	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water	Abs/.1mm scalar scalar scalar scalar scalar scalar	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG	 	
FLUID CONDITION	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	Abs/.1mm scalar scalar scalar scalar scalar scalar ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG 5	 	
FLUID CONDITION The oil viscosity is lower than normal. The BN result indicates that	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	Abs/.1mm scalar scalar scalar scalar scalar scalar ppm ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG 5 46		
	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG 5 46 <1		
The oil viscosity is lower than normal. The BN result indicates that	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG 5 46 <1 87		
The oil viscosity is lower than normal. The BN result indicates that	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG 5 46 <1 87 <1		
The oil viscosity is lower than normal. The BN result indicates that	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG 5 46 <1 87 <1 62		
The oil viscosity is lower than normal. The BN result indicates that	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG 5 46 <1 87 <1 62 2157		
The oil viscosity is lower than normal. The BN result indicates that	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium Calcium	Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG 5 46 <1 87 <1 62 2157 972		
The oil viscosity is lower than normal. The BN result indicates that	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium Calcium Phosphorus Zinc	Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 NONE NONE NORML NORML	19.3 NONE NONE NORML NORML NEG 5 46 <1 87 <1 62 2157 972 1164		
The oil viscosity is lower than normal. The BN result indicates that	Sulfation Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Malybdenum Manganese Magnesium Calcium	Abs/.1mm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	*ASTM D7415 *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>30 NONE NONE NORML >0.1	19.3 NONE NONE NORML NORML NEG 5 46 <1 87 <1 62 2157 972		

Base Number (BN) mg KOH/g ASTM D2896

ASTM D445

Visc @ 100°C cSt

7.4

12.0



