

OIL ANALYSIS REPORT



RAY VOLVO PENTA 1013941429 - PORT DIESEL ENGINE

Sample No: VPA051815
Oil Type: VOLVO VDS-4.5 Premium Motor Oil 15W40

SAMPLE INFORMATION

Sample Number	VPA051815	VPA051779	VPA048141	VPA034161
Sample Date	01 Mar 2024	29 Aug 2023	28 Jun 2023	08 Mar 2023
Machine Hours	5832	4821	4371	3823
Oil Hours	1011	980	519	874
Oil Changed	Changed	Changed	Not Changd	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	ATTENTION

NEWT MARINE
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 DUBUQUE, IA
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OIL CONDITION

Visc @ 100°C	cSt	▲ 11.7	■ 12.6	■ 12.7	● 12.1
Base Number (BN)	mg KOH/g	■ 8.4	■ 9.1	■ 9.0	■ 9.2
Oxidation (PA)	%	63	61	65	63

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	■ 0.3	■ 0.3	■ 0.2	■ 0.3
Nitration (PA)	%	63	72	56	68
Sulfation (PA)	%	57	58	57	58
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	▲ 4.0	<1.0	<1.0	▲ 3.8
Silicon	ppm	■ 4	■ 18	■ 3	■ 5
Sodium	ppm	■ 3	■ 1	■ 0	■ 2
Potassium	ppm	■ 2	■ <1	■ 2	■ 2

WEAR METALS

Iron	ppm	■ 0	■ 7	■ 5	■ 9
Copper	ppm	■ <1	■ 1	■ <1	■ 1
Lead	ppm	■ 2	■ <1	■ <1	■ <1
Tin	ppm	■ <1	■ <1	■ <1	■ <1
Aluminum	ppm	■ <1	■ 0	■ 2	■ <1
Chromium	ppm	■ <1	■ <1	■ 0	■ <1
Molybdenum	ppm	■ 61	■ 62	■ 62	■ 60
Nickel	ppm	■ 0	■ 0	■ 0	■ 0
Titanium	ppm	■ 0	■ 0	■ 0	■ <1
Silver	ppm	■ 0	■ 0	■ 0	■ 0
Manganese	ppm	■ <1	■ <1	■ 0	■ 1
Vanadium	ppm	<1	<1	0	<1

ADDITIVES

Calcium	ppm	■ 1156	■ 1076	■ 1047	■ 1106
Magnesium	ppm	1086	■ 1014	■ 899	■ 984
Zinc	ppm	■ 1406	■ 1283	■ 1193	■ 1325
Phosphorus	ppm	■ 1122	■ 1005	■ 1011	■ 989
Barium	ppm	■ 0	■ 0	■ 0	■ 0
Boron	ppm	■ 0	■ 0	■ 0	■ 1

Diagnosis

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Depot: VP99298099
Unique No: 10915905
Signed: Jonathan Hester
Report Date: 12 Mar 2024

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VOLVO PENTA

GRAPHS

