

OIL ANALYSIS REPORT

VOLVO PENTA

GREG GARTRELL GEOFF VOLVO PENTA A404558 - STARBOARD DIESEL ENGINE

Sample No: VPA050574

Oil Type: VOLVO VDS-4.5 Premium Motor Oil 15W40

SAMPLE INFORMATION

Sample Number	VPA050574	VPA034168	VPA038685	---
Sample Date	27 Jun 2023	19 Apr 2022	07 Jul 2021	---
Machine Hours	0	724	628	---
Oil Hours	0	0	100	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	NORMAL	NORMAL	NORMAL	---

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OIL CONDITION

Visc @ 100°C	cSt	█ 13.4	█ 13.6	█ 13.7	---
Base Number (BN)	mg KOH/g	█ 9.8	█ 10.8	---	---
Oxidation (PA)	%	60	59	60	---

CONTAMINATION

Soot %	%	█ 0.2	█ 0.3	█ 0.4	---
Nitration (PA)	%	43	53	57	---
Sulfation (PA)	%	53	57	58	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	<1.0	<1.0	<1.0	---
Silicon	ppm	█ 5	█ 4	█ 5	---
Sodium	ppm	█ 2	█ <1	█ 5	---
Potassium	ppm	█ 3	█ <1	█ <1	---

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

WEAR METALS

Iron	ppm	█ 10	█ 11	█ 25	---
Copper	ppm	█ 2	█ 4	█ 7	---
Lead	ppm	█ <1	█ 1	█ 3	---
Tin	ppm	█ <1	█ <1	█ <1	---
Aluminum	ppm	█ <1	█ 2	█ 2	---
Chromium	ppm	█ <1	█ <1	█ 1	---
Molybdenum	ppm	█ 58	█ 50	█ 49	---
Nickel	ppm	█ <1	█ <1	█ 2	---
Titanium	ppm	█ 0	█ 0	█ 0	---
Silver	ppm	█ 0	█ 0	█ 0	---
Manganese	ppm	█ <1	█ <1	█ <1	---
Vanadium	ppm	<1	0	0	---

ADDITIVES

Calcium	ppm	█ 1085	█ 1079	█ 1059	---
Magnesium	ppm	█ 990	█ 885	█ 844	---
Zinc	ppm	█ 1253	█ 1140	█ 1021	---
Phosphorus	ppm	█ 1008	█ 923	█ 917	---
Barium	ppm	█ <1	█ 0	█ 0	---
Boron	ppm	█ 2	█ 11	█ 18	---

Depot: VP794951
Unique No: 10546805
Signed: Don Baldrige
Report Date: 07 Jul 2023

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GRAPHS

