

# OIL ANALYSIS REPORT

# VOLVO PENTA

## WERNER, CARL VOLVO PENTA 2013764245 - STARBOARD DIESEL ENGINE

**Sample No:** VPA049898  
**Oil Type:** VOLVO PENTA SAE 15W40

### SAMPLE INFORMATION

Sample Number	VPA049898	VPA039487	VPA026749	---
Sample Date	16 Oct 2023	07 Dec 2021	15 Oct 2020	---
Machine Hours	594	552	457	---
Oil Hours	42	0	150	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	NORMAL	NORMAL	NORMAL	---

### OIL CONDITION

Visc @ 100°C	cSt	█ 13.2	█ 13.2	█ 13.4	---
Base Number (BN)	mg KOH/g	█ 9.9	█ 10.2	---	---
Oxidation (PA)	%	56	59	62	---

### CONTAMINATION

Soot %	%	█ 0.1	█ 0.2	█ 0.5	---
Nitration (PA)	%	44	52	61	---
Sulfation (PA)	%	52	55	57	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	<1.0	<1.0	<1.0	---
Silicon	ppm	█ 6	█ 8	█ 5	---
Sodium	ppm	█ 1	█ 1	█ 3	---
Potassium	ppm	█ 0	█ 2	█ 5	---

### WEAR METALS

Iron	ppm	█ 6	█ 6	█ 13	---
Copper	ppm	█ <1	█ 2	█ 3	---
Lead	ppm	█ 0	█ 1	█ <1	---
Tin	ppm	█ <1	█ 1	█ 1	---
Aluminum	ppm	█ <1	█ 1	█ 0	---
Chromium	ppm	█ 0	█ <1	█ <1	---
Molybdenum	ppm	█ 55	█ 62	█ 63	---
Nickel	ppm	█ 0	█ <1	█ <1	---
Titanium	ppm	█ 0	█ <1	█ <1	---
Silver	ppm	█ 0	█ 0	█ <1	---
Manganese	ppm	█ 0	█ <1	█ <1	---
Vanadium	ppm	0	0	0	---

### ADDITIVES

Calcium	ppm	█ 1000	█ 1166	█ 1159	---
Magnesium	ppm	█ 847	1057	█ 834	---
Zinc	ppm	█ 1099	█ 1341	█ 1173	---
Phosphorus	ppm	█ 918	█ 1166	█ 1020	---
Barium	ppm	█ 0	█ 0	█ 6	---
Boron	ppm	█ 4	█ 7	8	---

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### 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.

**Depot:** VP153685  
**Unique No:** 10698222  
**Signed:** Don Baldrige  
**Report Date:** 18 Oct 2023

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## GRAPHS

