

# OIL ANALYSIS REPORT

**VOLVO  
PENTA**

## GREENBERG 500-87 JAY VOLVO PENTA A225628 - STARBOARD DIESEL ENGINE

**Sample No:** VPA021889  
**Oil Type:** DIESEL ENGINE OIL SAE 40

### SAMPLE INFORMATION

Sample Number	VPA021889	VPA026757	---	---
Sample Date	21 Nov 2023	10 Dec 2020	---	---
Machine Hours	1128	0	---	---
Oil Hours	0	0	---	---
Oil Changed	N/A	N/A	---	---
Sample Status	NORMAL	SEVERE	---	---

**Outstanding Marine**  
PO Box 274  
GALENA, MD  
US 21635  
Contact: Ronda Bolinger  
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T:  
F:

### OIL CONDITION

Visc @ 100°C	cSt	█ 14.1	█ 14.0	---	---
Base Number (BN)	mg KOH/g	█ 8.2	---	---	---
Oxidation (PA)	%	█ 63	27	---	---

### CONTAMINATION

Water	%	NEG	NEG	---	---
Soot %	%	█ 0.3	█ 0	---	---
Nitration (PA)	%	█ 56	29	---	---
Sulfation (PA)	%	█ 55	67	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	<1.0	---	---
Silicon	ppm	█ 4	█ 41	---	---
Sodium	ppm	█ 1	█ 5	---	---
Potassium	ppm	█ 4	█ 7	---	---

### 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 suitable for further service.

### WEAR METALS

Iron	ppm	█ 9	█ 324	---	---
Copper	ppm	█ 4	█ 30	---	---
Lead	ppm	█ 0	█ 0	---	---
Tin	ppm	█ <1	█ 0	---	---
Aluminum	ppm	█ 1	█ 2	---	---
Chromium	ppm	█ <1	█ 2	---	---
Molybdenum	ppm	█ 12	█ 0	---	---
Nickel	ppm	█ <1	█ 4	---	---
Titanium	ppm	█ <1	█ <1	---	---
Silver	ppm	█ 0	█ 1	---	---
Manganese	ppm	█ <1	4	---	---
Vanadium	ppm	<1	0	---	---

### ADDITIVES

Calcium	ppm	█ 1894	█ 10	---	---
Magnesium	ppm	█ 185	█ 19	---	---
Zinc	ppm	█ 1173	█ 23	---	---
Phosphorus	ppm	█ 962	█ 1254	---	---
Barium	ppm	█ 0	█ 0	---	---
Boron	ppm	█ 135	█ 175	---	---

**Depot:** VP153685  
**Unique No:** 10816334  
**Signed:** Don Baldrige  
**Report Date:** 04 Jan 2024

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## GRAPHS

