

# OIL ANALYSIS REPORT

# VOLVO PENTA

## MIKE GORMAN VOLVO PENTA 7011435670 - STARBOARD DIESEL ENGINE

**Sample No:** VPA055068  
**Oil Type:** VOLVO PENTA SAE 15W40

### SAMPLE INFORMATION

Sample Number	<b>VPA055068</b>	VPA031077	VPA026980	VPA020876
Sample Date	<b>10 Aug 2023</b>	08 Dec 2022	20 Oct 2020	19 Nov 2019
Machine Hours	<b>980</b>	947	559	408
Oil Hours	<b>0</b>	0	0	350
Oil Changed	<b>N/A</b>	N/A	Changed	Changed
Sample Status	<b>ATTENTION</b>	ATTENTION	NORMAL	NORMAL

**Outstanding Marine**  
 PO Box 274  
 GALENA, MD  
 US 21635  
 Contact: Ronda Bolinger  
 rlwb@verizon.net  
 T:  
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### OIL CONDITION

Visc @ 100°C	cSt	<b>▲ 12.3</b>	▲ 11.9	■ 11.9	10.8
Base Number (BN)	mg KOH/g	<b>■ 9.3</b>	■ 9.9	---	---
Oxidation (PA)	%	<b>52</b>	55	59	62

### CONTAMINATION

Soot %	%	<b>■ 0.1</b>	■ 0.2	■ 0.3	■ 0.5
Nitration (PA)	%	<b>40</b>	50	60	69
Sulfation (PA)	%	<b>49</b>	52	57	57
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	▲ 3.3	<1.0	<1.0
Silicon	ppm	<b>■ 3</b>	■ 5	■ <1	■ 21
Sodium	ppm	<b>■ 1</b>	■ 3	■ 2	■ 2
Potassium	ppm	<b>■ 2</b>	■ 0	■ 0	■ <1

### WEAR METALS

Iron	ppm	<b>■ 6</b>	■ 7	■ 10	■ 20
Copper	ppm	<b>■ 17</b>	■ 22	■ 57	■ 125
Lead	ppm	<b>■ 2</b>	■ <1	■ 1	■ 2
Tin	ppm	<b>■ &lt;1</b>	■ <1	■ <1	■ 3
Aluminum	ppm	<b>■ 2</b>	■ <1	■ 0	■ 2
Chromium	ppm	<b>■ &lt;1</b>	■ <1	■ <1	■ 1
Molybdenum	ppm	<b>■ 59</b>	■ 57	■ 60	■ 48
Nickel	ppm	<b>■ &lt;1</b>	■ <1	■ 2	■ 3
Titanium	ppm	<b>■ 0</b>	■ 0	■ 0	■ 0
Silver	ppm	<b>■ &lt;1</b>	■ 0	■ <1	■ <1
Manganese	ppm	<b>■ &lt;1</b>	■ <1	■ <1	■ 2
Vanadium	ppm	<b>0</b>	0	0	0

### ADDITIVES

Calcium	ppm	<b>■ 1036</b>	■ 1008	■ 1033	■ 1046
Magnesium	ppm	<b>986</b>	■ 884	■ 927	■ 763
Zinc	ppm	<b>■ 1307</b>	■ 1177	■ 1190	■ 1027
Phosphorus	ppm	<b>■ 1080</b>	■ 988	■ 1068	■ 923
Barium	ppm	<b>■ 0</b>	■ 0	■ <1	■ <1
Boron	ppm	<b>■ 2</b>	■ 4	■ 6	■ 3

### Diagnosis

No corrective action is recommended at this time. 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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

**Depot:** VP153685  
**Unique No:** 10601855  
**Signed:** Jonathan Hester  
**Report Date:** 11 Aug 2023

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PENTA**

## GRAPHS

