

# OIL ANALYSIS REPORT



**MIKE GORMAN 23-2775 VOLVO PENTA 7011435670 - STARBOARD DIESEL ENGINE**

**Sample No:** VPA058531  
**Oil Type:** VOLVO PENTA SAE 15W40

## SAMPLE INFORMATION

Sample Number	<b>VPA058531</b>	VPA055068	VPA031077	VPA026980
Sample Date	<b>04 Dec 2023</b>	10 Aug 2023	08 Dec 2022	20 Oct 2020
Machine Hours	<b>1044</b>	980	947	559
Oil Hours	<b>100</b>	0	0	0
Oil Changed	<b>Changed</b>	N/A	N/A	Changed
Sample Status	<b>ATTENTION</b>	ATTENTION	ATTENTION	NORMAL

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

## OIL CONDITION

Visc @ 100°C	cSt	<b>▲ 11.6</b>	▲ 12.3	▲ 11.9	■ 11.9
Base Number (BN)	mg KOH/g	<b>■ 9.6</b>	■ 9.3	■ 9.9	---
Oxidation (PA)	%	<b>54</b>	52	55	59

## CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>■ 0.2</b>	■ 0.1	■ 0.2	■ 0.3
Nitration (PA)	%	<b>46</b>	40	50	60
Sulfation (PA)	%	<b>51</b>	49	52	57
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<b>▲ 3.3</b>	<1.0
Silicon	ppm	<b>■ 10</b>	■ 3	■ 5	■ <1
Sodium	ppm	<b>■ 3</b>	■ 1	■ 3	■ 2
Potassium	ppm	<b>■ 13</b>	■ 2	■ 0	■ 0

## Diagnosis

No corrective action is recommended at this time. 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 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.

## WEAR METALS

Iron	ppm	<b>■ 27</b>	■ 6	■ 7	■ 10
Copper	ppm	<b>■ 2</b>	■ 17	■ 22	■ 57
Lead	ppm	<b>■ 0</b>	■ 2	■ <1	■ 1
Tin	ppm	<b>■ &lt;1</b>	■ <1	■ <1	■ <1
Aluminum	ppm	<b>■ 7</b>	■ 2	■ <1	■ 0
Chromium	ppm	<b>■ 0</b>	■ <1	■ <1	■ <1
Molybdenum	ppm	<b>■ 62</b>	■ 59	■ 57	■ 60
Nickel	ppm	<b>■ 0</b>	■ <1	■ <1	■ 2
Titanium	ppm	<b>■ 0</b>	■ 0	■ 0	■ 0
Silver	ppm	<b>■ 0</b>	■ <1	■ 0	■ <1
Manganese	ppm	<b>■ &lt;1</b>	■ <1	■ <1	■ <1
Vanadium	ppm	<b>0</b>	0	0	0

## ADDITIVES

Calcium	ppm	<b>■ 1201</b>	■ 1036	■ 1008	■ 1033
Magnesium	ppm	<b>■ 909</b>	986	■ 884	■ 927
Zinc	ppm	<b>■ 1270</b>	■ 1307	■ 1177	■ 1190
Phosphorus	ppm	<b>■ 1007</b>	■ 1080	■ 988	■ 1068
Barium	ppm	<b>■ 0</b>	■ 0	■ 0	■ <1
Boron	ppm	<b>■ 4</b>	■ 2	■ 4	■ 6

**Depot:** VP153685  
**Unique No:** 10777211  
**Signed:** Jonathan Hester  
**Report Date:** 11 Dec 2023

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# VOLVO PENTA

## GRAPHS

