

# OIL ANALYSIS REPORT

# VOLVO PENTA

## RICHARDS VOLVO PENTA A844320 - STARBOARD DIESEL ENGINE

Sample No: VPA046441

Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

### SAMPLE INFORMATION

Sample Number	VPA046441	---	---	---
Sample Date	28 Jun 2023	---	---	---
Machine Hours	680	---	---	---
Oil Hours	0	---	---	---
Oil Changed	Changed	---	---	---
Sample Status	NORMAL	---	---	---

### OIL CONDITION

Visc @ 100°C	cSt	█ 13.5	---	---	---
Base Number (BN)	mg KOH/g	█ 10.0	---	---	---
Oxidation (PA)	%	67	---	---	---

### CONTAMINATION

Soot %	%	█ 0.4	---	---	---
Nitration (PA)	%	77	---	---	---
Sulfation (PA)	%	57	---	---	---
Glycol	%	NEG	---	---	---
Fuel	%	< 1.0	---	---	---
Silicon	ppm	█ 4	---	---	---
Sodium	ppm	█ 2	---	---	---
Potassium	ppm	█ 2	---	---	---

### WEAR METALS

Iron	ppm	█ 17	---	---	---
Copper	ppm	█ 9	---	---	---
Lead	ppm	█ 2	---	---	---
Tin	ppm	█ < 1	---	---	---
Aluminum	ppm	█ 2	---	---	---
Chromium	ppm	█ 1	---	---	---
Molybdenum	ppm	█ 63	---	---	---
Nickel	ppm	█ 3	---	---	---
Titanium	ppm	█ < 1	---	---	---
Silver	ppm	█ < 1	---	---	---
Manganese	ppm	█ 2	---	---	---
Vanadium	ppm	< 1	---	---	---

### ADDITIVES

Calcium	ppm	█ 1146	---	---	---
Magnesium	ppm	█ 1022	---	---	---
Zinc	ppm	█ 1268	---	---	---
Phosphorus	ppm	█ 1039	---	---	---
Barium	ppm	█ 0	---	---	---
Boron	ppm	█ < 1	---	---	---

### FULL KEEL MARINE SERVICES

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ANNAPOLIS, MD  
US 21401  
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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 suitable for further service.

Depot: VP1298996  
Unique No: 10608020  
Signed: Don Baldrige  
Report Date: 21 Aug 2023

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## GRAPHS

