

# OIL ANALYSIS REPORT

# VOLVO PENTA

## MORNING STAR MORNING STAR VOLVO PENTA A1147418 - STARBOARD DIESEL ENGINE

Sample No: VPA058191

Oil Type: CHEVRON DELO 400 MULTIGRADE 15W40

### SAMPLE INFORMATION

Sample Number	VPA058191	---	---	---
Sample Date	23 Jan 2024	---	---	---
Machine Hours	636	---	---	---
Oil Hours	0	---	---	---
Oil Changed	Changed	---	---	---
Sample Status	NORMAL	---	---	---

**North Harbor Diesel Inc**  
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ANACORTES, WA  
US 98221  
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### OIL CONDITION

Visc @ 100°C	cSt	█ 13.6	---	---	---
Base Number (BN)	mg KOH/g	█ 8.1	---	---	---
Oxidation (PA)	%	60	---	---	---

### 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.

### CONTAMINATION

Water	%	NEG	---	---	---
Soot %	%	█ 0.1	---	---	---
Nitration (PA)	%	46	---	---	---
Sulfation (PA)	%	58	---	---	---
Glycol	%	NEG	---	---	---
Fuel	%	<1.0	---	---	---
Silicon	ppm	█ 6	---	---	---
Sodium	ppm	█ 2	---	---	---
Potassium	ppm	█ 2	---	---	---

### WEAR METALS

Iron	ppm	█ 12	---	---	---
Copper	ppm	█ 4	---	---	---
Lead	ppm	█ 2	---	---	---
Tin	ppm	█ 1	---	---	---
Aluminum	ppm	█ 4	---	---	---
Chromium	ppm	█ 1	---	---	---
Molybdenum	ppm	█ 76	---	---	---
Nickel	ppm	█ 1	---	---	---
Titanium	ppm	█ <1	---	---	---
Silver	ppm	█ 0	---	---	---
Manganese	ppm	█ <1	---	---	---
Vanadium	ppm	<1	---	---	---

### ADDITIVES

Calcium	ppm	█ 1234	---	---	---
Magnesium	ppm	█ 390	---	---	---
Zinc	ppm	█ 1163	---	---	---
Phosphorus	ppm	█ 981	---	---	---
Barium	ppm	█ 0	---	---	---
Boron	ppm	█ 471	---	---	---

**Depot:** VP179089  
**Unique No:** 10858561  
**Signed:** Don Baldrige  
**Report Date:** 02 Feb 2024

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## GRAPHS

