

# OIL ANALYSIS REPORT



## NADINE URUIOLI CLUB NAUTIQUE VOLVO D4-3001-F A441331 - STARBOARD DIESEL ENGINE

Sample No: VPA051751

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

### SAMPLE INFORMATION

Sample Number	VPA051751	VPA022882	VPA031820	VPA023277
Sample Date	07 Sep 2023	13 Aug 2021	26 Oct 2020	28 Nov 2018
Machine Hours	1975	1460	1258	882
Oil Hours	1975	202	200	261
Oil Changed	Changed	Changed	Not Changd	Not Changd
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

### Helmut's Marine Service

619 Canal Street  
SAN RAFAEL, CA  
US 94901-3545  
Contact: NADINE URUIOLI  
SERVICE@HELMUTSMARINE.COM

T: x:

F: x:

### OIL CONDITION

Visc @ 100°C	cSt	█ 13.3	█ 13.2	█ 13.4	█ 13.69
Base Number (BN)	mg KOH/g	█ 9.3	---	---	---
Oxidation (PA)	%	█ 61	65	65	61

### CONTAMINATION

Soot %	%	█ 0.3	█ 0.2	█ 0.3	█ 0.3
Nitration (PA)	%	█ 60	63	63	59
Sulfation (PA)	%	█ 55	58	59	55
Glycol	%	█ NEG	NEG	NEG	NEG
Fuel	%	█ <1.0	<1.0	<1.0	<1.0
Silicon	ppm	█ 4	█ 5	█ 5	█ 6
Sodium	ppm	█ 2	█ 2	█ 3	█ 3
Potassium	ppm	█ 1	█ 0	█ 0	█ <1

### 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.

### WEAR METALS

Iron	ppm	█ 27	█ 18	█ 21	█ 22
Copper	ppm	█ 6	█ 4	█ 6	█ 10
Lead	ppm	█ 1	█ <1	█ 1	█ 3
Tin	ppm	█ <1	█ 0	█ <1	█ <1
Aluminum	ppm	█ 2	█ 2	█ 5	█ 4
Chromium	ppm	█ 2	█ 2	█ 1	█ 2
Molybdenum	ppm	█ 61	█ 55	█ 61	█ 60
Nickel	ppm	█ 5	█ 4	█ 4	█ 5
Titanium	ppm	█ <1	█ <1	█ <1	█ 0
Silver	ppm	█ 0	█ 0	█ 0	█ 0
Manganese	ppm	█ <1	█ <1	█ <1	█ <1
Vanadium	ppm	█ <1	█ <1	0	0

### ADDITIVES

Calcium	ppm	█ 1219	█ 1045	█ 1004	█ 1023
Magnesium	ppm	█ 1102	█ 972	█ 923	█ 944
Zinc	ppm	█ 1389	█ 1135	█ 1133	█ 1088
Phosphorus	ppm	█ 1102	█ 991	█ 968	█ 982
Barium	ppm	█ 0	█ 0	█ 0	█ 0
Boron	ppm	█ 0	█ 7	█ 1	█ 4

Depot: VP152741

Unique No: 10649613

Signed: Sean Felton

Report Date: 20 Sep 2023

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# VOLVO PENTA

## GRAPHS

