

# OIL ANALYSIS REPORT



## NADINE URUIOLI FRED DWYER VOLVO PENTA 2006039445 - CENTER GASOLINE ENGINE

Sample No: VPA053029

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

### SAMPLE INFORMATION

Sample Number	VPA053029	VPA040455	VPA019412	VPA017044
Sample Date	18 Apr 2024	09 May 2022	22 May 2019	22 Feb 2018
Machine Hours	1156	1138	976	976
Oil Hours	1156	1138	0	176
Oil Changed	Changed	Not Changd	Not Changd	Not Changd
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

**Helmut's Marine Service**  
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 SERVICE@HELMUTSMARINE.COM  
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### OIL CONDITION

Visc @ 100°C	cSt	█ 13.5	█ 13.7	█ 13.6	█ 13.55
Base Number (BN)	mg KOH/g	█ 10.1	█ 9.7	---	---
Oxidation (PA)	%	█ 18	█ 64	█ 58	█ 48

### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	█ 0.1	█ 0.2	█ 0.1	█ 0
Nitration (PA)	%	█ 7	█ 62	█ 55	█ 58
Sulfation (PA)	%	█ 13	█ 56	█ 52	█ 47
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	█ 10	█ 4	█ 3	█ 3
Sodium	ppm	█ 6	█ 21	█ 8	█ 3
Potassium	ppm	█ <1	█ 1	█ 1	█ <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	█ 12	█ 18	█ 11	█ 14
Copper	ppm	█ <1	█ 3	█ 3	█ 5
Lead	ppm	█ 0	█ 1	█ 3	█ 3
Tin	ppm	█ 0	█ <1	█ 0	█ <1
Aluminum	ppm	█ <1	█ 3	█ 7	█ 18
Chromium	ppm	█ 0	█ 1	█ <1	█ 2
Molybdenum	ppm	█ 62	█ 58	█ 65	█ 54
Nickel	ppm	█ 0	█ 0	█ <1	█ <1
Titanium	ppm	█ 0	█ 0	█ 0	█ <1
Silver	ppm	█ 0	█ <1	█ 0	█ 0
Manganese	ppm	█ 0	<1	█ 1	█ <1
Vanadium	ppm	█ 0	█ 0	█ 0	█ 0

### ADDITIVES

Calcium	ppm	█ 1297	█ 1126	█ 1167	█ 1066
Magnesium	ppm	█ 1014	█ 1059	█ 1058	█ 906
Zinc	ppm	█ 1466	█ 1386	█ 1281	█ 1047
Phosphorus	ppm	█ 1204	█ 1123	█ 1108	█ 974
Barium	ppm	█ 0	█ 0	█ 0	█ 0
Boron	ppm	█ 0	█ 8	█ 7	█ 6

Depot: VP152741  
 Unique No: 10994106  
 Signed: Angela Borella  
 Report Date: 25 Apr 2024

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**VOLVO  
PENTA**

## GRAPHS

