

OIL ANALYSIS REPORT



NADINE URUIOLI SF WHALE TOURS VOLVO 7011339121 (S/N 701133121) - PORT DIESEL ENGINE

Sample No: VPA054892

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

SAMPLE INFORMATION

Sample Number	VPA054892	VPA045745	VPA019409	VPA010106
Sample Date	09 May 2024	25 May 2023	10 Jun 2019	14 May 2018
Machine Hours	8462	7698	5100	3222
Oil Hours	8462	0	0	1000
Oil Changed	Changed	Not Changd	Not Changd	Not Changd
Sample Status	ATTENTION	MARGINAL	ABNORMAL	ATTENTION

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	11.8	12.3	11.3	12.05
Base Number (BN)	mg KOH/g	7.9	9.0	---	---
Oxidation (PA)	%	64	64	56	52

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.4	0.4	0.3	0.9
Nitration (PA)	%	63	61	57	67
Sulfation (PA)	%	57	59	53	55
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	2.5	2.3	4.8	<1.0
Silicon	ppm	8	5	3	9
Sodium	ppm	4	2	5	5
Potassium	ppm	4	<1	1	17

WEAR METALS

Iron	ppm	17	18	12	55
Copper	ppm	63	47	56	145
Lead	ppm	4	<1	3	<1
Tin	ppm	4	<1	<1	2
Aluminum	ppm	5	<1	2	3
Chromium	ppm	3	<1	<1	3
Molybdenum	ppm	60	60	54	60
Nickel	ppm	3	<1	<1	4
Titanium	ppm	2	0	0	<1
Silver	ppm	3	0	<1	0
Manganese	ppm	3	<1	<1	<1
Vanadium	ppm	2	0	0	0

ADDITIVES

Calcium	ppm	1132	1131	932	1029
Magnesium	ppm	886	996	864	943
Zinc	ppm	1158	1307	1023	991
Phosphorus	ppm	961	1057	863	732
Barium	ppm	1	0	0	0
Boron	ppm	20	3	4	<1

Diagnosis

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. Light fuel dilution occurring. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Depot: VP152741

Unique No: 11033672

Signed: Jonathan Hester

Report Date: 21 May 2024

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VOLVO PENTA

GRAPHS

