

OIL ANALYSIS REPORT

VOLVO PENTA

VOLVO 10103539399 - DIESEL ENGINE

Sample No: VPA011606

Oil Type: SHELL ROTELLA T 15W40

SAMPLE INFORMATION

Sample Number	VPA011606	VPA011601	VPA011604	VPA011597
Sample Date	17 Oct 2023	21 Mar 2022	17 Dec 2020	20 Nov 2019
Machine Hours	9480	7596	6130	4816
Oil Hours	180	180	180	220
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

TENACIOUS MARINE

53 MEADOW LANE
WEST BARNSTABLE, MD
US 02668
Contact: ERIC HESSE
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T: (508)364-1100
F:

OIL CONDITION

Visc @ 100°C	cSt	13.4	13.9	12.8	13.7
Base Number (BN)	mg KOH/g	8.6	8.6	---	---
Oxidation (PA)	%	62	71	62	64

CONTAMINATION

Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	54	57	50	53
Sulfation (PA)	%	52	59	56	55
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	4	<1	2	4
Sodium	ppm	2	<1	2	2
Potassium	ppm	<1	8	9	13

WEAR METALS

Iron	ppm	2	1	2	2
Copper	ppm	<1	<1	<1	<1
Lead	ppm	0	<1	2	<1
Tin	ppm	0	<1	0	0
Aluminum	ppm	<1	<1	1	<1
Chromium	ppm	0	0	<1	<1
Molybdenum	ppm	44	<1	1	2
Nickel	ppm	0	0	<1	0
Titanium	ppm	0	0	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	<1	0	0	<1
Vanadium	ppm	0	0	0	0

ADDITIVES

Calcium	ppm	1587	2329	2531	2292
Magnesium	ppm	507	27	16	19
Zinc	ppm	1254	1257	1243	1138
Phosphorus	ppm	1022	1033	1021	983
Barium	ppm	0	0	0	0
Boron	ppm	43	186	151	168

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: TENWESMD
Unique No: 10710535
Signed: Don Baldrige
Report Date: 26 Oct 2023

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GRAPHS

