

OIL ANALYSIS REPORT

VOLVO PENTA

ROBERT ARNING VOLVO PENTA A828407 - STARBOARD DIESEL ENGINE

Sample No: VPA036701

Oil Type: SHELL ROTELLA T 15W40

SAMPLE INFORMATION

Sample Number	VPA036701	VPA043833	VPA043618	VPA033932
Sample Date	17 Nov 2023	09 Nov 2022	06 Nov 2021	30 Oct 2020
Machine Hours	793	744	682	629
Oil Hours	793	744	682	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	NORMAL

Larry's Lighthouse Marina

1250
AQUEBOGUE, NY
US 11931
Contact: MAX FUHLBRUGGE
info@lighthousemarina.com

T: x:

F: x:

OIL CONDITION

Visc @ 100°C	cSt	14.4	14.7	14.7	14.5
Base Number (BN)	mg KOH/g	8.8	9.5	---	---
Oxidation (PA)	%	64	71	67	67

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.2	0.2	0.3	0.5
Nitration (PA)	%	50	58	55	66
Sulfation (PA)	%	56	60	58	59
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	3	3	3	4
Sodium	ppm	2	<1	1	4
Potassium	ppm	6	9	6	0

WEAR METALS

Iron	ppm	24	7	9	15
Copper	ppm	8	6	8	15
Lead	ppm	2	<1	1	2
Tin	ppm	0	<1	<1	1
Aluminum	ppm	▲ 51	1	0	0
Chromium	ppm	5	0	<1	<1
Molybdenum	ppm	2	2	11	51
Nickel	ppm	<1	0	1	2
Titanium	ppm	0	0	0	<1
Silver	ppm	0	0	<1	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	0	0	0	0

ADDITIVES

Calcium	ppm	2191	2274	2075	1386
Magnesium	ppm	36	33	133	651
Zinc	ppm	1330	1195	1077	1172
Phosphorus	ppm	1071	1024	971	1000
Barium	ppm	66	0	0	0
Boron	ppm	188	186	159	54

Diagnosis

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. The aluminum level is abnormal. All other 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.

Depot: VP610438

Unique No: 10767938

Signed: Don Baldrige

Report Date: 05 Dec 2023

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GRAPHS

