

OIL ANALYSIS REPORT

VOLVO PENTA

RICK KOLLE-NORDIC TUG VOLVO PENTA D6-3701-F A494115 - PORT MAIN ENGINE

Sample No: VPA036709

Oil Type: SHELL ROTELLA T 15W40

SAMPLE INFORMATION

Sample Number	VPA036709	VPA043419	VPA043972	VPA022848
Sample Date	14 Dec 2023	01 Dec 2022	05 Dec 2021	13 Nov 2019
Machine Hours	1026	837	686	322
Oil Hours	1026	837	686	322
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

Larry's Lighthouse Marina
1250
AQUEBOGUE, NY
US 11931
Contact: MAX FUHLBRUGGE
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T: x:
F: x:

OIL CONDITION

Visc @ 100°C	cSt	13.8	13.6	14.6	14.6
Base Number (BN)	mg KOH/g	8.5	11.3	8.50	---
Oxidation (PA)	%	60	38	68	66

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.4
Nitration (PA)	%	49	43	54	53
Sulfation (PA)	%	53	42	57	57
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	3	3	3	5
Sodium	ppm	1	<1	2	2
Potassium	ppm	6	2	7	7

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	6	7	7	12
Copper	ppm	6	4	5	4
Lead	ppm	<1	1	<1	1
Tin	ppm	0	<1	<1	0
Aluminum	ppm	5	2	1	2
Chromium	ppm	1	<1	<1	<1
Molybdenum	ppm	8	41	<1	0
Nickel	ppm	2	2	1	<1
Titanium	ppm	0	<1	0	0
Silver	ppm	0	0	<1	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	<1	<1	0	0

ADDITIVES

Calcium	ppm	1891	1483	2286	2250
Magnesium	ppm	171	1096	15	16
Zinc	ppm	1178	1458	1229	1138
Phosphorus	ppm	1004	1131	1026	996
Barium	ppm	0	0	0	0
Boron	ppm	158	35	199	174

Depot: VP610438
Unique No: 10843041
Signed: Angela Borella
Report Date: 23 Jan 2024

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GRAPHS

