

OIL ANALYSIS REPORT

**VOLVO
PENTA**

ENCORE I - PORT MAIN ENGINE

Sample No: VPA021818
Oil Type: DURON 15W40

SAMPLE INFORMATION

Sample Number	VPA021818	VPA042626	VPA039850	VPA035188
Sample Date	08 Feb 2024	05 Apr 2023	02 Aug 2022	16 Sep 2021
Machine Hours	6163	5186	4387	0
Oil Hours	200	225	215	200
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ATTENTION	NORMAL	ATTENTION	ATTENTION

BAY STATE CRUISE COMPANY
200 SEAPORT BLVD, SUITE 50 LOWER LEVEL
BOSTON, MA
US 02210
Contact: CHRISTINE HOOLEY
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OIL CONDITION

Visc @ 100°C	cSt	14.4	13.8	14.3	10.4
Base Number (BN)	mg KOH/g	9.5	9.6	9.2	---
Oxidation (PA)	%	53	52	55	45

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	45	46	49	41
Sulfation (PA)	%	48	47	49	47
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	0.1
Silicon	ppm	3	4	3	2
Sodium	ppm	1	0	1	2
Potassium	ppm	<1	1	1	3

WEAR METALS

Iron	ppm	7	2	7	4
Copper	ppm	4	2	2	2
Lead	ppm	1	<1	<1	<1
Tin	ppm	0	<1	<1	<1
Aluminum	ppm	32	1	19	<1
Chromium	ppm	2	<1	1	<1
Molybdenum	ppm	62	58	43	3
Nickel	ppm	<1	<1	<1	0
Titanium	ppm	0	<1	0	0
Silver	ppm	0	<1	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	<1	0	0

ADDITIVES

Calcium	ppm	1142	1011	1495	1237
Magnesium	ppm	1033	851	691	31
Zinc	ppm	1346	1087	1151	874
Phosphorus	ppm	1098	916	1007	717
Barium	ppm	0	0	0	0
Boron	ppm	<1	26	53	143

Diagnosis

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 suitable for further service.

Depot: VPBAYBOS
Unique No: 11073304
Signed: Don Baldrige
Report Date: 13 Jun 2024

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GRAPHS

