

OIL ANALYSIS REPORT



ALPHA CAS VOLVO PENTA 2013962541 - STARBOARD DIESEL ENGINE

Sample No: VPA060058

Oil Type: VOLVO VDS-4.5 Premium Motor Oil 15W40

SAMPLE INFORMATION

Sample Number	VPA060058	VPA029888	VPA037258	VPA041630
Sample Date	18 Jun 2024	13 Oct 2023	12 Jan 2023	16 Jun 2022
Machine Hours	0	632	388	221
Oil Hours	187	244	200	221
Oil Changed	Changed	N/A	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

ALPHA CAS

100 BUELL HILL RD
KILLINGWORTH, CT
US 06419
Contact: JOSHUA SUMMERS
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F:

OIL CONDITION

Visc @ 100°C	cSt	13.1	13.1	13.1	13.2
Base Number (BN)	mg KOH/g	9.0	9.1	9.3	8.0
Oxidation (PA)	%	63	65	58	41

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.3	0.3	0.3	0.3
Nitration (PA)	%	66	65	58	51
Sulfation (PA)	%	57	58	54	44
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	3	8	9	23
Sodium	ppm	<1	<1	1	3
Potassium	ppm	2	4	6	21

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.

WEAR METALS

Iron	ppm	3	12	13	35
Copper	ppm	2	4	7	27
Lead	ppm	<1	1	1	3
Tin	ppm	<1	1	1	4
Aluminum	ppm	2	2	2	11
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	63	75	57	51
Nickel	ppm	0	<1	<1	2
Titanium	ppm	0	<1	0	0
Silver	ppm	0	0	0	3
Manganese	ppm	0	<1	<1	3
Vanadium	ppm	0	0	0	<1

ADDITIVES

Calcium	ppm	1090	1246	1090	1158
Magnesium	ppm	996	1154	912	1126
Zinc	ppm	1328	1467	1241	1635
Phosphorus	ppm	975	1207	1043	1276
Barium	ppm	0	3	0	0
Boron	ppm	2	4	0	3

Depot: ALPKIL
Unique No: 11099185
Signed: Don Baldrige
Report Date: 27 Jun 2024

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**VOLVO
PENTA**

GRAPHS

