

OIL ANALYSIS REPORT



ALPHA CAS VOLVO PENTA 2013962586 - PORT DIESEL ENGINE

Sample No: VPA044559
Oil Type: VOLVO VDS-4.5 Premium Motor Oil 15W40

SAMPLE INFORMATION

Sample Number	VPA044559	VPA037269	VPA037275	VPA041633
Sample Date	18 Jun 2024	15 Oct 2023	11 Jan 2023	16 Jun 2022
Machine Hours	815	628	385	217
Oil Hours	187	243	200	217
Oil Changed	Changed	Changed	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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 T:
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OIL CONDITION

Visc @ 100°C	cSt	13.2	13.3	13.2	13.1
Base Number (BN)	mg KOH/g	9.1	9.1	9.4	8.0
Oxidation (PA)	%	66	69	60	41

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.4	0.3	0.3	0.3
Nitration (PA)	%	71	71	60	52
Sulfation (PA)	%	59	60	55	44
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	3	6	8	21
Sodium	ppm	<1	0	1	1
Potassium	ppm	2	4	7	25

WEAR METALS

Iron	ppm	5	11	14	36
Copper	ppm	2	5	9	34
Lead	ppm	<1	1	1	3
Tin	ppm	<1	<1	1	3
Aluminum	ppm	2	2	2	14
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	62	64	57	47
Nickel	ppm	0	<1	<1	0
Titanium	ppm	0	<1	0	0
Silver	ppm	0	0	0	<1
Manganese	ppm	0	<1	<1	3
Vanadium	ppm	0	0	0	0

ADDITIVES

Calcium	ppm	1109	1093	1085	1103
Magnesium	ppm	1005	979	909	998
Zinc	ppm	1348	1266	1230	1469
Phosphorus	ppm	1011	1000	1033	1194
Barium	ppm	0	3	0	0
Boron	ppm	4	5	0	3

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: ALPKIL
Unique No: 11099184
Signed: Don Baldrige
Report Date: 27 Jun 2024

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**VOLVO
PENTA**

GRAPHS

