

OIL ANALYSIS REPORT

**VOLVO
PENTA**

DENISON 15282 VOLVO PENTA E190573462 - STARBOARD DIESEL ENGINE

Sample No: VPA054912

Oil Type: VOLVO PENTA SAE 15W40

SAMPLE INFORMATION

Sample Number	VPA054912	VPA050777	VPA038624	VPA037617
Sample Date	16 May 2024	15 Sep 2023	14 Sep 2021	16 Apr 2021
Machine Hours	1400	1400	0	482
Oil Hours	10	0	0	0
Oil Changed	Not Chngd	Changed	N/A	N/A
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

W J Clark Inc

4517 Dunning Road
NORFOLK, VA
US 23518
Contact: WALTER CLARK
ychtfixer@aol.com

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OIL CONDITION

Visc @ 100°C	cSt	█ 13.5	█ 13.3	█ 13.3	█ 13.2
Base Number (BN)	mg KOH/g	█ 9.8	█ 9.6	---	---
Oxidation (PA)	%	53	56	59	64

CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	█ 0.1	█ 0.3	█ 0.2	█ 0.3
Nitration (PA)	%	38	51	50	57
Sulfation (PA)	%	49	53	55	60
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	█ 9	█ 12	█ 8	█ 13
Sodium	ppm	█ 2	█ <1	█ 0	█ 3
Potassium	ppm	█ 1	█ <1	█ <1	█ <1

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	█ 6	█ 7	█ 6	█ 18
Copper	ppm	█ 9	█ 60	█ 35	█ 58
Lead	ppm	█ 0	█ <1	█ <1	█ 0
Tin	ppm	█ <1	█ 0	█ <1	█ <1
Aluminum	ppm	█ 2	█ 2	█ <1	█ 0
Chromium	ppm	█ <1	█ 1	█ <1	█ <1
Molybdenum	ppm	█ 58	█ 66	█ 60	█ 61
Nickel	ppm	█ 0	█ <1	█ <1	█ 1
Titanium	ppm	█ 0	█ 0	█ 0	█ 0
Silver	ppm	█ <1	█ <1	█ <1	█ <1
Manganese	ppm	█ <1	█ <1	█ <1	█ <1
Vanadium	ppm	0	0	0	0

ADDITIVES

Calcium	ppm	█ 997	█ 1139	█ 1088	█ 1043
Magnesium	ppm	█ 953	992	█ 980	█ 928
Zinc	ppm	█ 1263	█ 1316	█ 1285	█ 1161
Phosphorus	ppm	█ 1071	█ 1101	█ 1064	█ 1036
Barium	ppm	█ 0	█ 0	█ 0	█ 0
Boron	ppm	█ 2	█ 1	█ 5	█ 0

Depot: VP151520
Unique No: 11037089
Signed: Jonathan Hester
Report Date: 23 May 2024

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GRAPHS

