

# OIL ANALYSIS REPORT



## MARK & SUE RINGHAM MSR VOLVO PENTA 7008496978 - STARBOARD DIESEL ENGINE

**Sample No:** VPA059421  
**Oil Type:** VOLVO VDS-4.5 Premium Motor Oil 15W40

### SAMPLE INFORMATION

Sample Number	<b>VPA059421</b>	VPA059972	VPA055379	VPA041135
Sample Date	<b>19 Jun 2024</b>	24 Apr 2024	21 Oct 2023	20 May 2023
Machine Hours	<b>1048</b>	849	654	451
Oil Hours	<b>199</b>	195	203	201
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL

### ALL SYSTEMS MARINE

700 MYRICK ST  
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### OIL CONDITION

Visc @ 100°C	cSt	<b>13.1</b>	13.1	13.1	13.0
Base Number (BN)	mg KOH/g	<b>10.0</b>	9.6	9.9	10.2
Oxidation (PA)	%	<b>59</b>	57	57	60

### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.4</b>	0.1	0.1	0.1
Nitration (PA)	%	<b>53</b>	46	46	50
Sulfation (PA)	%	<b>54</b>	53	52	55
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>11</b>	10	65	10
Sodium	ppm	<b>2</b>	<1	<1	2
Potassium	ppm	<b>3</b>	0	2	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	<b>9</b>	3	<1	3
Copper	ppm	<b>46</b>	8	2	5
Lead	ppm	<b>2</b>	0	<1	0
Tin	ppm	<b>&lt;1</b>	0	0	0
Aluminum	ppm	<b>2</b>	<1	1	<1
Chromium	ppm	<b>&lt;1</b>	0	0	0
Molybdenum	ppm	<b>59</b>	64	56	62
Nickel	ppm	<b>&lt;1</b>	0	<1	0
Titanium	ppm	<b>&lt;1</b>	0	0	0
Silver	ppm	<b>&lt;1</b>	0	<1	0
Manganese	ppm	<b>&lt;1</b>	2	<1	0
Vanadium	ppm	<b>&lt;1</b>	0	0	0

### ADDITIVES

Calcium	ppm	<b>1272</b>	1119	963	1155
Magnesium	ppm	<b>974</b>	977	895	977
Zinc	ppm	<b>1353</b>	1261	1207	1314
Phosphorus	ppm	<b>1106</b>	1094	1015	1060
Barium	ppm	<b>0</b>	<1	0	0
Boron	ppm	<b>9</b>	6	4	<1

**Depot:** VP99220003  
**Unique No:** 11097248  
**Signed:** Don Baldrige  
**Report Date:** 26 Jun 2024

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# VOLVO PENTA

## GRAPHS

