

# OIL ANALYSIS REPORT

**VOLVO  
PENTA**

**GRIFFIN JB VOLVO PENTA 7011468214 - CENTER DIESEL ENGINE**

**Sample No:** VPA036956  
**Oil Type:** SHELL ROTELLA T 15W40

**SAMPLE INFORMATION**

Sample Number	<b>VPA036956</b>	VPA024147	VPA035803	VPA032967
Sample Date	<b>28 Oct 2023</b>	07 Oct 2022	25 Oct 2021	02 Nov 2020
Machine Hours	<b>212</b>	178	126	0
Oil Hours	<b>0</b>	0	45	81
Oil Changed	<b>Changed</b>	Changed	N/A	Changed
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	ATTENTION

**Point Judith Marina**  
360 Gooseberry Road  
WAKEFIELD, RI  
US 02879  
Contact: MATT ST. ANGELO  
service@pjmarina.com;canastasio@wearcheckusa.com  
T: (401)789-7189  
F: (401)783-5350

**OIL CONDITION**

Visc @ 100°C	cSt	<b>13.5</b>	12.6	12.6	11.6
Base Number (BN)	mg KOH/g	<b>8.9</b>	10.2	---	---
Oxidation (PA)	%	<b>64</b>	137	58	64

**CONTAMINATION**

Soot %	%	<b>0.1</b>	0.1	0.2	0.3
Nitration (PA)	%	<b>47</b>	82	45	54
Sulfation (PA)	%	<b>55</b>	87	54	57
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	▲ 2.2
Silicon	ppm	<b>5</b>	8	13	▲ 34
Sodium	ppm	<b>4</b>	0	1	4
Potassium	ppm	<b>7</b>	0	<1	2

**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 acceptable for the time in service.

**WEAR METALS**

Iron	ppm	<b>4</b>	3	4	11
Copper	ppm	<b>12</b>	18	19	32
Lead	ppm	<b>&lt;1</b>	<1	1	2
Tin	ppm	<b>&lt;1</b>	<1	1	1
Aluminum	ppm	<b>2</b>	<1	<1	0
Chromium	ppm	<b>&lt;1</b>	<1	<1	1
Molybdenum	ppm	<b>10</b>	55	58	48
Nickel	ppm	<b>&lt;1</b>	0	<1	<1
Titanium	ppm	<b>&lt;1</b>	0	<1	<1
Silver	ppm	<b>0</b>	0	<1	<1
Manganese	ppm	<b>0</b>	<1	<1	<1
Vanadium	ppm	<b>&lt;1</b>	0	0	0

**ADDITIVES**

Calcium	ppm	<b>1847</b>	1028	1090	1292
Magnesium	ppm	<b>169</b>	902	910	705
Zinc	ppm	<b>1163</b>	1205	1228	1109
Phosphorus	ppm	<b>988</b>	1005	945	998
Barium	ppm	<b>&lt;1</b>	0	0	0
Boron	ppm	<b>159</b>	7	11	3

**Depot:** VP153811  
**Unique No:** 10723686  
**Signed:** Don Baldrige  
**Report Date:** 02 Nov 2023

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## GRAPHS

