



VOLVO PENTA

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
BRAD SPIEGEL [GEOFF/502071]

Machine Id
VOLVO PENTA 2013565632

Component
Port Diesel Engine

Fluid
VOLVO VDS-4.5 Premium Motor Oil 15W40 (15 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VPA056419	VPA042077	---
Sample Date		Client Info		14 Jun 2023	26 Sep 2022	---
Machine Age	hrs	Client Info		1449	1435	---
Oil Age	hrs	Client Info		67	55	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Not Changd	N/A	---
Filter Changed		Client Info		Not Changd	N/A	---
Sample Status				NORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	0	2	---
Chromium	ppm	ASTM D5185m	>6	<1	<1	---
Nickel	ppm	ASTM D5185m	>2	<1	0	---
Titanium	ppm	ASTM D5185m	>2	0	0	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>20	2	<1	---
Lead	ppm	ASTM D5185m	>95	<1	<1	---
Copper	ppm	ASTM D5185m	>85	32	36	---
Tin	ppm	ASTM D5185m	>9	1	<1	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

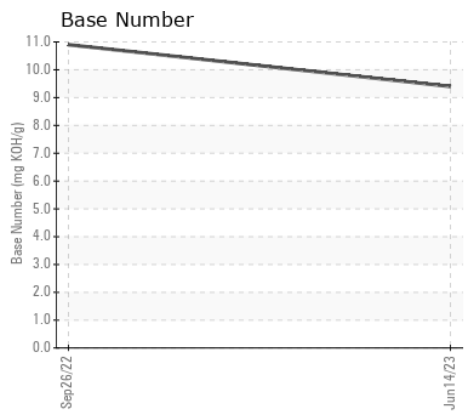
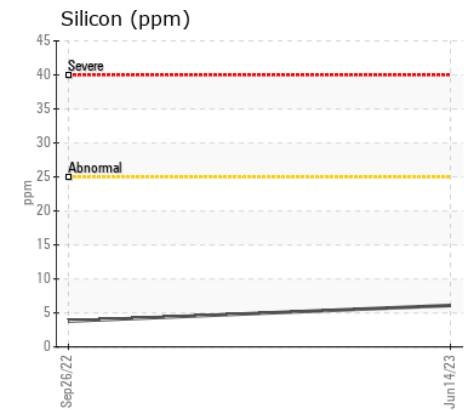
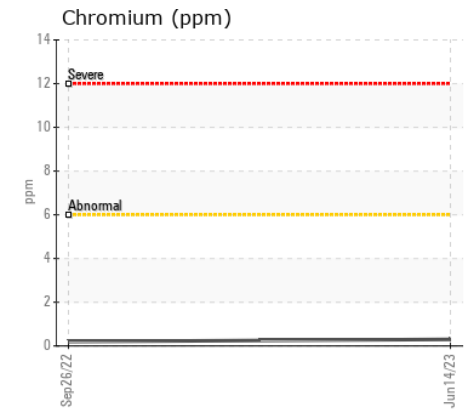
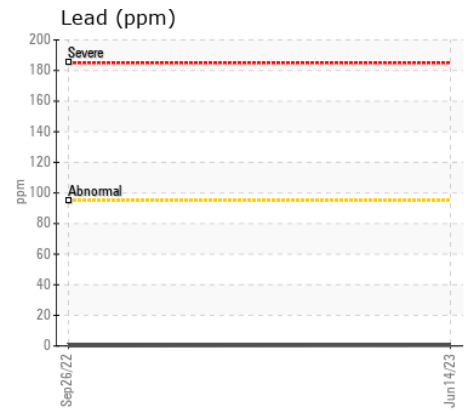
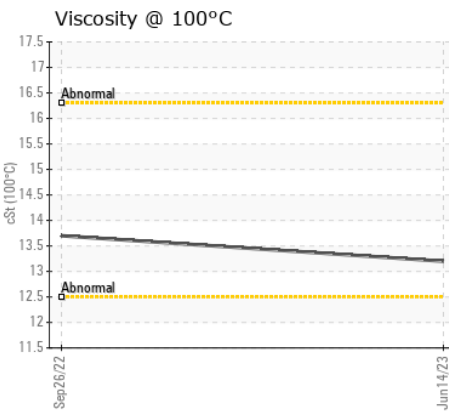
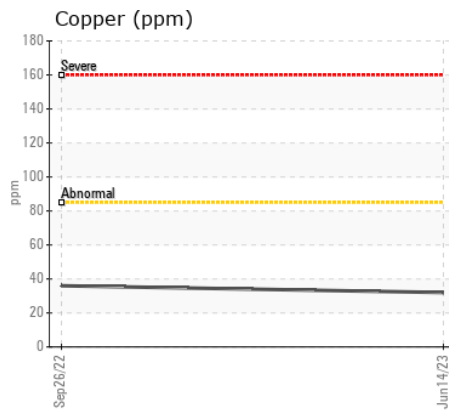
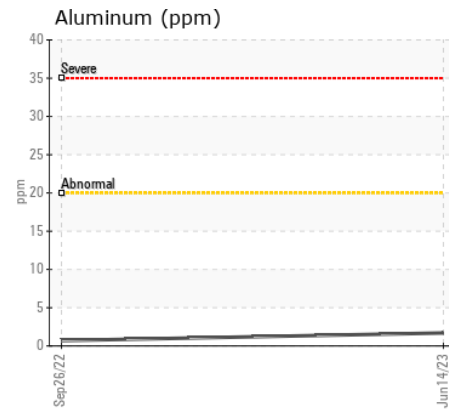
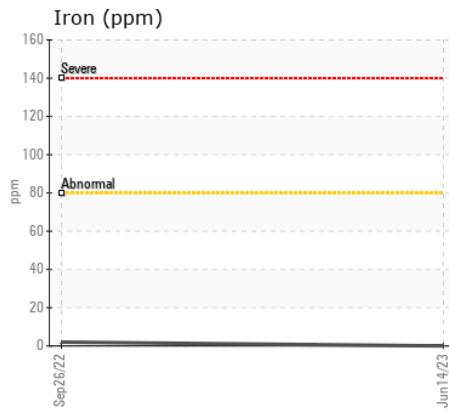
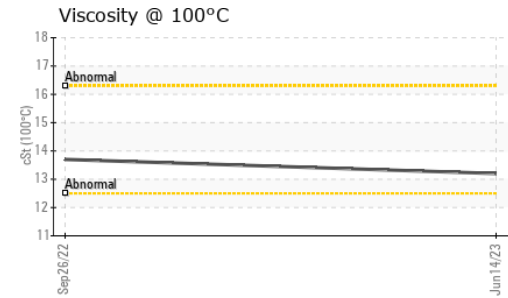
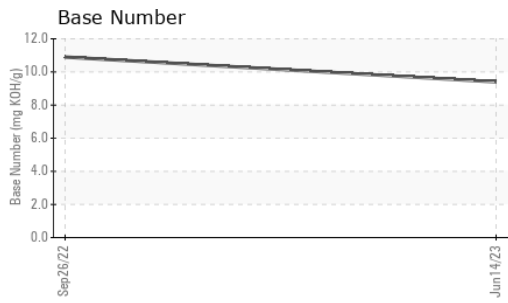
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	6	4	---
Potassium	ppm	ASTM D5185m	>20	2	1	---
Fuel		WC Method	>4.0	<1.0	<1.0	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844		0.1	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	5.2	5.6	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	20.2	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	---

FLUID CONDITION

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.

Sodium	ppm	ASTM D5185m		<1	0	---
Boron	ppm	ASTM D5185m		10	7	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		52	53	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m		994	911	---
Calcium	ppm	ASTM D5185m		1138	1128	---
Phosphorus	ppm	ASTM D5185m		1081	1042	---
Zinc	ppm	ASTM D5185m		1336	1202	---
Sulfur	ppm	ASTM D5185m		4194	3819	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9	14.5	---
Base Number (BN)	mg KOH/g	ASTM D2896		9.4	10.9	---
Visc @ 100°C	cSt	ASTM D445		13.2	13.7	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VPA056419 **Received** : 15 Jun 2023
Lab Number : 05874752 **Diagnosed** : 17 Jun 2023
Unique Number : 10519855 **Diagnostician** : Don Baldrige
Test Package : MOB 1 (Additional Tests: TBN)

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Endor Marine LLC - Coastal Marine - 152124

4300 11th Ave. NW
 SEATTLE, WA
 US 98107

Contact: WILLOW YANARELLA
 service@coastalmarineengine.com

T: (206)784-3703
 F: (206)784-8823