



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area  
**RUSSELL [RUSSELL]**  
 Machine Id  
**VOLVO PENTA 2013657573**  
 Component  
**Starboard Diesel Engine**  
 Fluid  
**VOLVO PENTA SAE 15W40 (12 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>VPA057284</b>	VPA037952	VPA031913
Sample Date		Client Info		<b>28 Jun 2024</b>	27 Jan 2022	28 Sep 2020
Machine Age	hrs	Client Info		<b>928</b>	473	347
Oil Age	hrs	Client Info		<b>0</b>	473	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	<b>7</b>	6	6
Chromium	ppm	ASTM D5185m	>6	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>2	<b>1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>1</b>	2	4
Lead	ppm	ASTM D5185m	>95	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m	>85	<b>1</b>	2	2
Tin	ppm	ASTM D5185m	>9	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

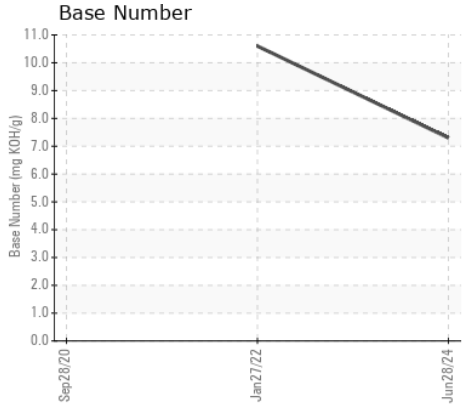
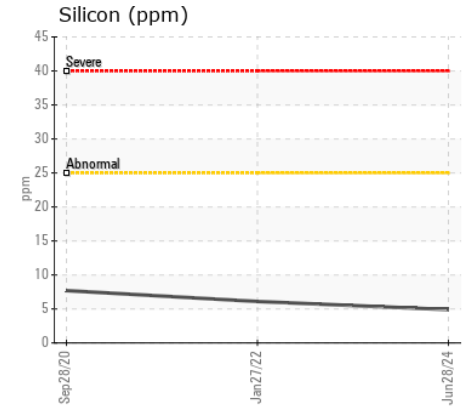
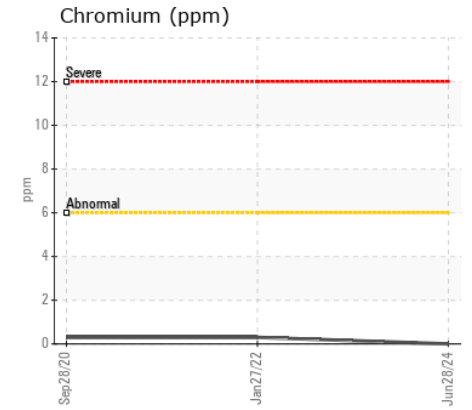
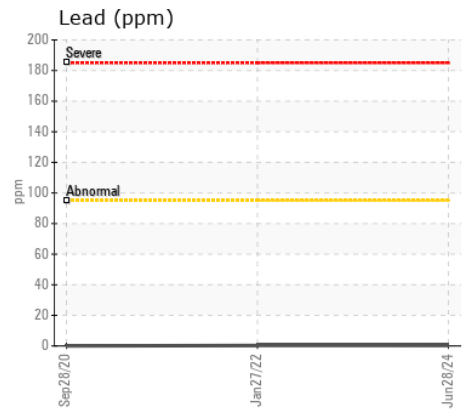
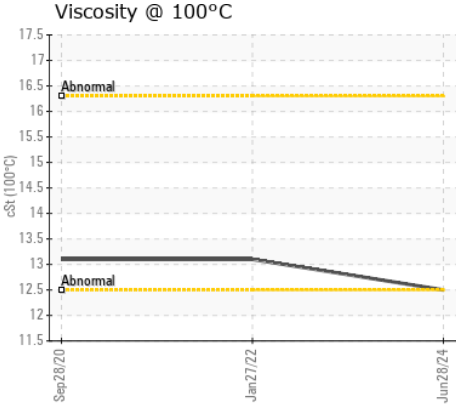
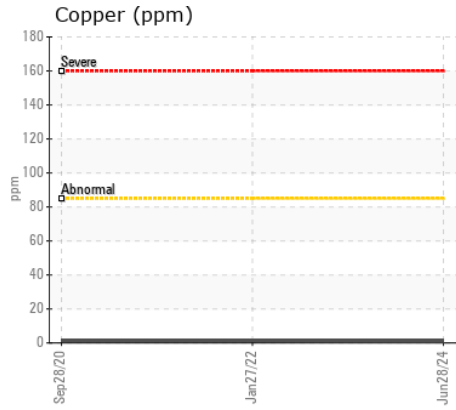
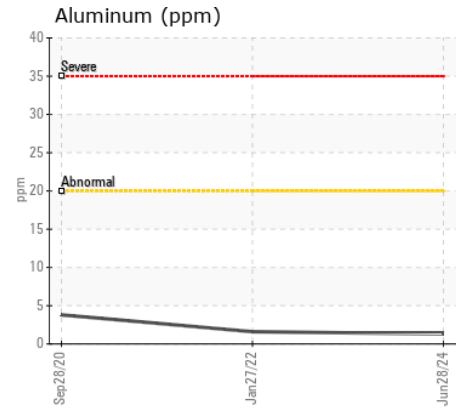
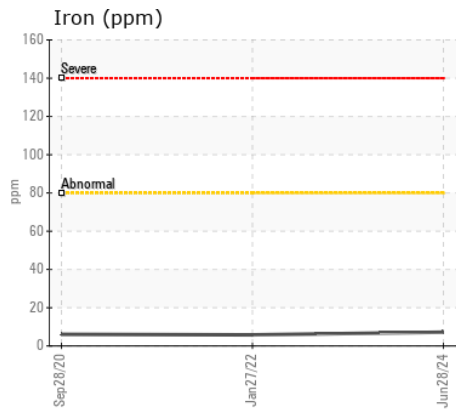
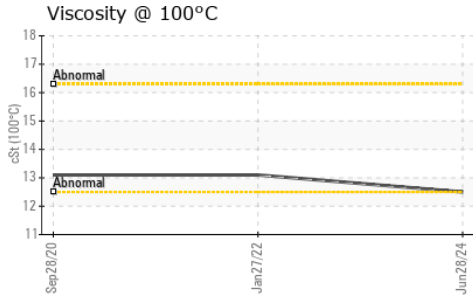
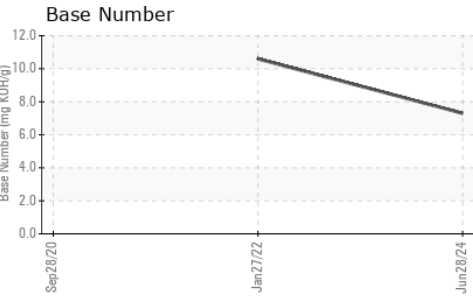
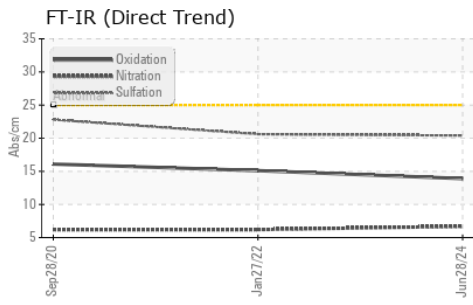
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>5</b>	6	8
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	4
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.5</b>	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.7</b>	6.2	6.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.4</b>	20.6	22.8
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>1</b>	3	1
Boron	ppm	ASTM D5185m		<b>214</b>	34	293
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>84</b>	64	106
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>552</b>	950	600
Calcium	ppm	ASTM D5185m		<b>1428</b>	1099	1527
Phosphorus	ppm	ASTM D5185m		<b>1015</b>	1042	731
Zinc	ppm	ASTM D5185m		<b>1270</b>	1051	826
Sulfur	ppm	ASTM D5185m		<b>3655</b>	2641	2116
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.9</b>	15.1	16.1
Base Number (BN)	mg KOH/g	ASTM D2896		<b>7.3</b>	10.6	---
Visc @ 100°C	cSt	ASTM D445		<b>12.5</b>	13.1	13.1



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VPA057284 **Received** : 05 Jul 2024  
**Lab Number** : 06229368 **Tested** : 09 Jul 2024  
**Unique Number** : 11112861 **Diagnosed** : 09 Jul 2024 - Jonathan Hester  
**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)

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