



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
EPA REGION 10 [DANIEL/502754]

Machine Id
VOLVO PENTA 2006020618

Component
Center Diesel Engine

Fluid
VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (4 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VPA059624	---	---
Sample Date		Client Info		22 Feb 2024	---	---
Machine Age	hrs	Client Info		1235	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				ABNORMAL	---	---

WEAR

The aluminum level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	25	---	---
Chromium	ppm	ASTM D5185m	>6	4	---	---
Nickel	ppm	ASTM D5185m	>2	1	---	---
Titanium	ppm	ASTM D5185m	>2	<1	---	---
Silver	ppm	ASTM D5185m	>2	<1	---	---
Aluminum	ppm	ASTM D5185m	>20	▲ 57	---	---
Lead	ppm	ASTM D5185m	>95	<1	---	---
Copper	ppm	ASTM D5185m	>85	2	---	---
Tin	ppm	ASTM D5185m	>9	<1	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

There is no indication of any contamination in the oil.

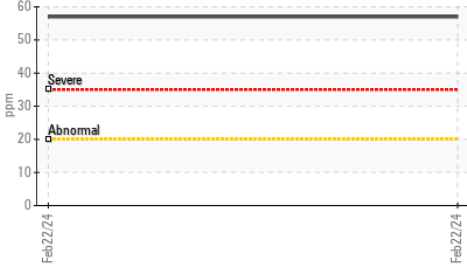
Silicon	ppm	ASTM D5185m	>25	8	---	---
Potassium	ppm	ASTM D5185m	>20	1	---	---
Fuel		WC Method	>4.0	<1.0	---	---
Water		WC Method	>0.1	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844		0.1	---	---
Nitration	Abs/cm	*ASTM D7624	>20	5.8	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.9	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.1	NEG	---	---

FLUID CONDITION

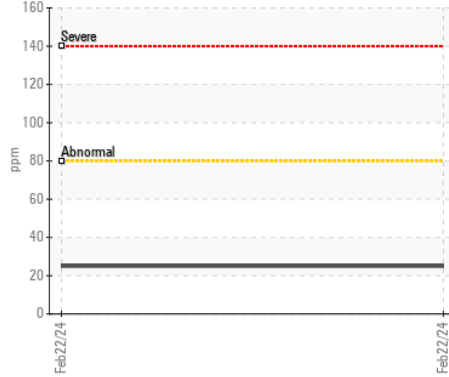
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		2	---	---
Boron	ppm	ASTM D5185m	2.5	4	---	---
Barium	ppm	ASTM D5185m	0.0	1	---	---
Molybdenum	ppm	ASTM D5185m	0.7	60	---	---
Manganese	ppm	ASTM D5185m	0.0	1	---	---
Magnesium	ppm	ASTM D5185m	256	938	---	---
Calcium	ppm	ASTM D5185m	2057	1010	---	---
Phosphorus	ppm	ASTM D5185m	935	960	---	---
Zinc	ppm	ASTM D5185m	1223	1184	---	---
Sulfur	ppm	ASTM D5185m	4079	3445	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.5	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	9.7	---	---
Visc @ 100°C	cSt	ASTM D445	15.0	13.5	---	---

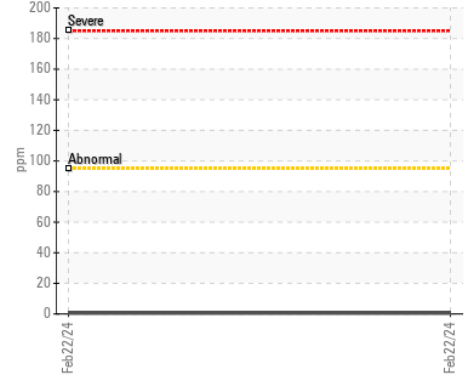
▲ Aluminum (ppm)



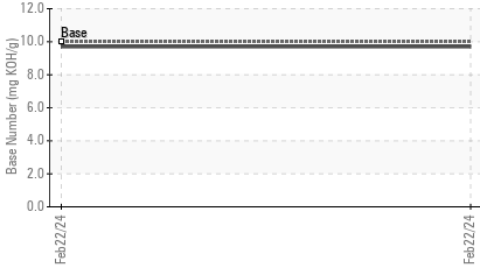
Iron (ppm)



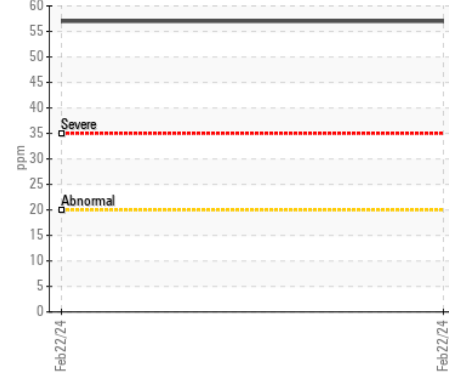
Lead (ppm)



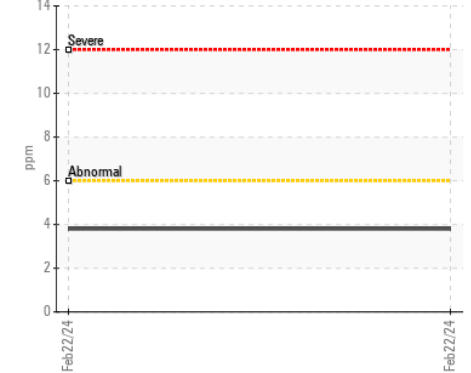
Base Number



▲ Aluminum (ppm)



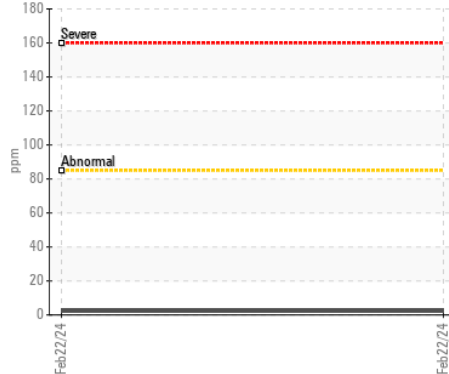
Chromium (ppm)



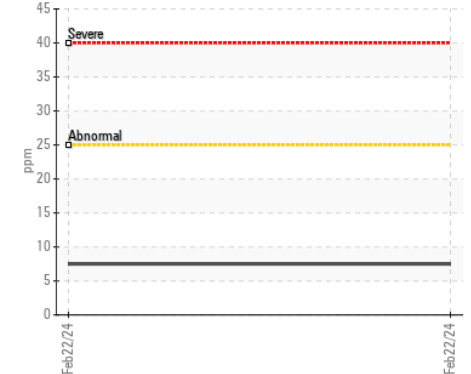
Viscosity @ 100°C



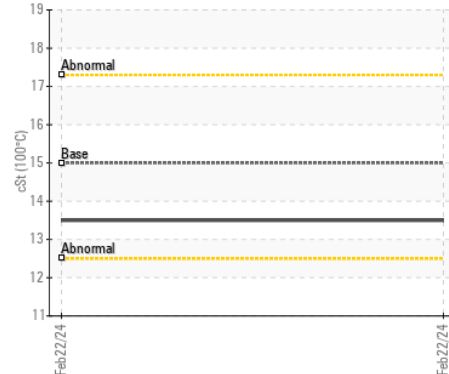
Copper (ppm)



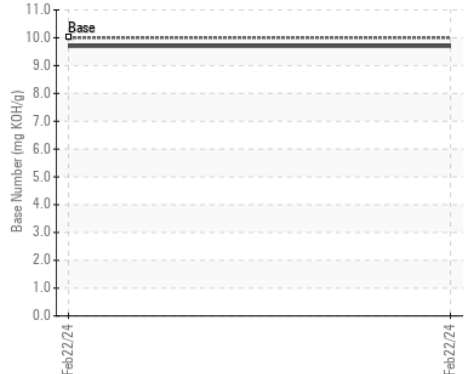
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : VPA059624

Lab Number : 06102667

Unique Number : 10900897

Test Package : MOB 1 (Additional Tests: TBN)

Received : 28 Feb 2024

Tested : 29 Feb 2024

Diagnosed : 29 Feb 2024 - Don Baldrige

Endor Marine LLC - Coastal Marine - 152124

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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)