



OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ATTENTION
NORMAL
NORMAL

Area
ED OELTJEN [DANIEL/502899]
Machine Id
VOLVO PENTA A443572
Component
Starboard Diesel Engine
Fluid
VOLVO PENTA SAE 15W40 (2 GAL)

RECOMMENDATION

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VPA062858	VPA055434	VPA048972
Sample Date		Client Info		15 Apr 2024	27 Mar 2023	29 Mar 2022
Machine Age	hrs	Client Info		723	677	615
Oil Age	hrs	Client Info		0	76	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				ATTENTION	NORMAL	NORMAL

WEAR

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	105	69	89
Chromium	ppm	ASTM D5185m	>6	5	3	5
Nickel	ppm	ASTM D5185m	>2	4	3	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	8	5	6
Lead	ppm	ASTM D5185m	>95	1	1	1
Copper	ppm	ASTM D5185m	>85	15	11	16
Tin	ppm	ASTM D5185m	>9	1	<1	1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

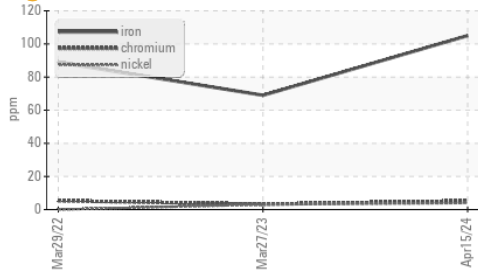
Silicon	ppm	ASTM D5185m	>25	18	13	22
Potassium	ppm	ASTM D5185m	>20	5	2	4
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.4	0.4	0.7
Nitration	Abs/cm	*ASTM D7624	>20	7.1	7.4	9.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.4	20.7	23.1
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

FLUID CONDITION

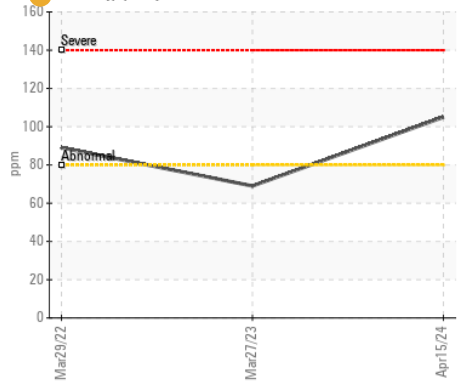
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		5	4	0
Boron	ppm	ASTM D5185m		1	0	1
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		86	60	65
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		1434	950	1019
Calcium	ppm	ASTM D5185m		1520	1058	1146
Phosphorus	ppm	ASTM D5185m		1624	1025	1132
Zinc	ppm	ASTM D5185m		1858	1236	1364
Sulfur	ppm	ASTM D5185m		5118	3046	3019
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.4	15.5	17.7
Base Number (BN)	mg KOH/g	ASTM D2896		9.8	9.8	10.6
Visc @ 100°C	cSt	ASTM D445		13.6	13.7	14.12

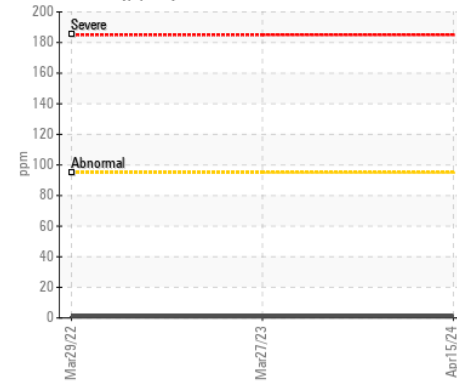
Ferrous Alloys



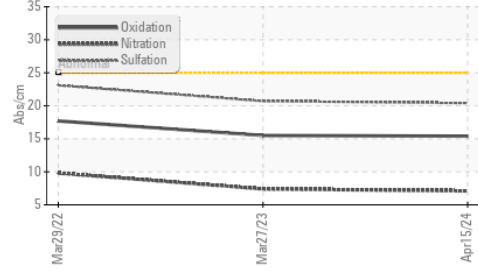
Iron (ppm)



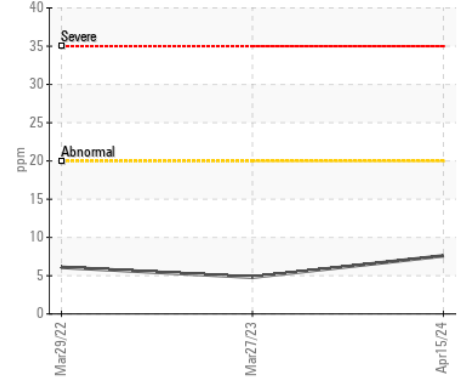
Lead (ppm)



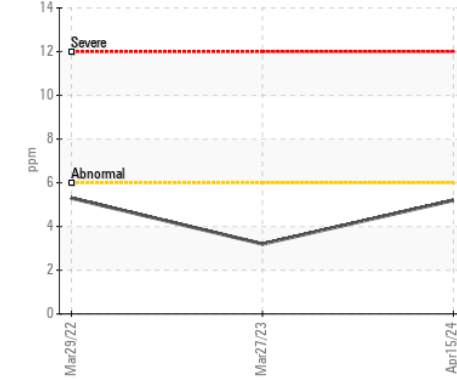
FT-IR (Direct Trend)



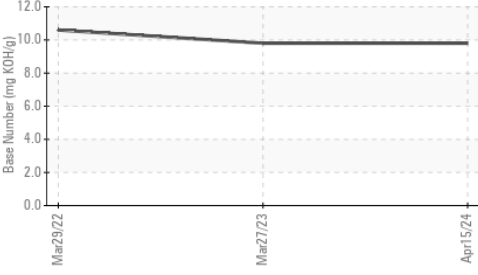
Aluminum (ppm)



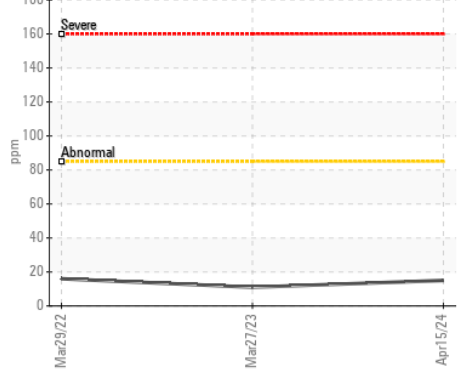
Chromium (ppm)



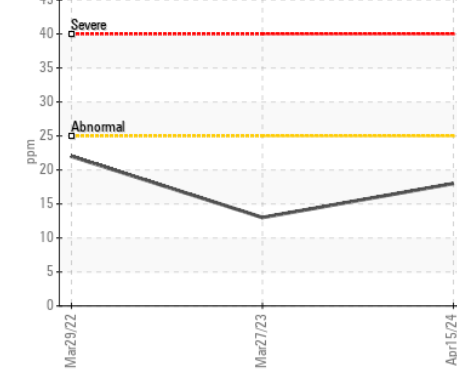
Base Number



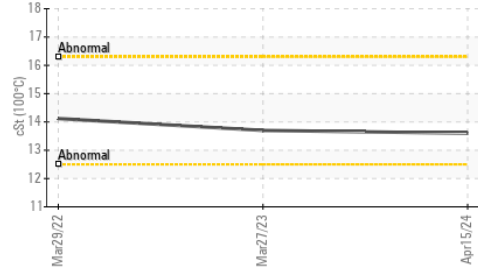
Copper (ppm)



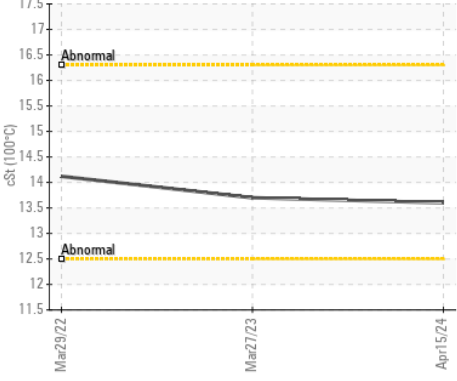
Silicon (ppm)



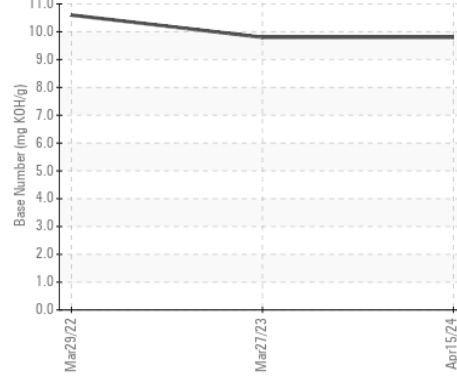
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VPA062858 **Received** : 19 Apr 2024
Lab Number : 06154026 **Tested** : 22 Apr 2024
Unique Number : 10989449 **Diagnosed** : 23 Apr 2024 - Don Baldrige
Test Package : MOB 1 (Additional Tests: TBN)

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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)