



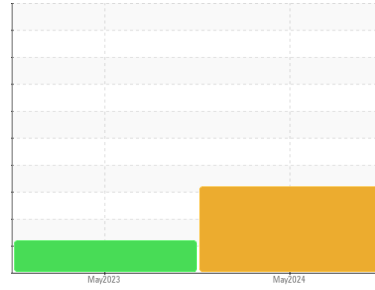
OIL ANALYSIS REPORT

Sample Rating Trend

DEGRADATION



Area
ONE WORLD LOGISTICS
 Machine Id
VOLVO OWL207133
 Component
Diesel Engine
 Fluid
{not provided} (--- GAL)



DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

Cylinder, crank, or cam shaft wear is indicated.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN level is low. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		NL0002296	NL0001535	---
Sample Date	Client Info		03 May 2024	04 May 2023	---
Machine Age	mls	Client Info	512014	352593	---
Oil Age	mls	Client Info	89513	73838	---
Oil Changed	Client Info		Changed	Changed	---
Sample Status			ABNORMAL	ABNORMAL	---

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>6.0	<1.0	<1.0	---
Water	WC Method	>0.2	NEG	NEG	---
Glycol	WC Method		NEG	NEG	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	▲ 105	85	---
Chromium	ppm	ASTM D5185m >20	2	2	---
Nickel	ppm	ASTM D5185m >2	0	<1	---
Titanium	ppm	ASTM D5185m	<1	<1	---
Silver	ppm	ASTM D5185m >2	0	0	---
Aluminum	ppm	ASTM D5185m >25	6	5	---
Lead	ppm	ASTM D5185m >40	6	3	---
Copper	ppm	ASTM D5185m >330	11	20	---
Tin	ppm	ASTM D5185m >15	1	2	---
Vanadium	ppm	ASTM D5185m	<1	0	---
Cadmium	ppm	ASTM D5185m	0	0	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	5	---
Barium	ppm	ASTM D5185m	2	2	---
Molybdenum	ppm	ASTM D5185m	71	82	---
Manganese	ppm	ASTM D5185m	2	2	---
Magnesium	ppm	ASTM D5185m	1203	1155	---
Calcium	ppm	ASTM D5185m	1324	1490	---
Phosphorus	ppm	ASTM D5185m	1226	1249	---
Zinc	ppm	ASTM D5185m	1677	1650	---
Sulfur	ppm	ASTM D5185m	3077	3221	---

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	12	11	---
Sodium	ppm	ASTM D5185m	9	6	---
Potassium	ppm	ASTM D5185m >20	8	8	---

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	1.4	1.2	---
Nitration	Abs/cm	*ASTM D7624 >20	17.1	14.0	---
Sulfation	Abs/.1mm	*ASTM D7415 >30	32.5	27.8	---

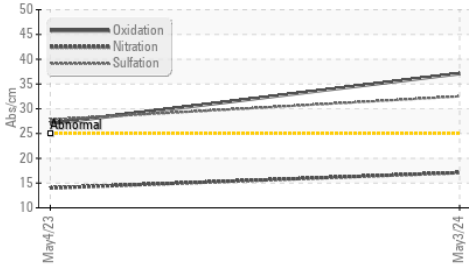
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	▲ 37.1	27.0	---
Base Number (BN)	mg KOH/g	ASTM D2896	▲ 1.9	▲ 3.9	---

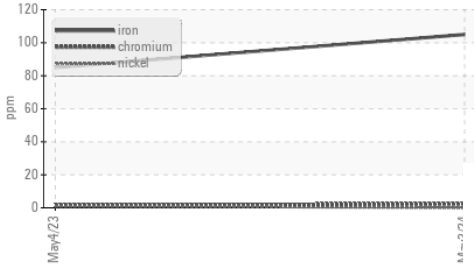


OIL ANALYSIS REPORT

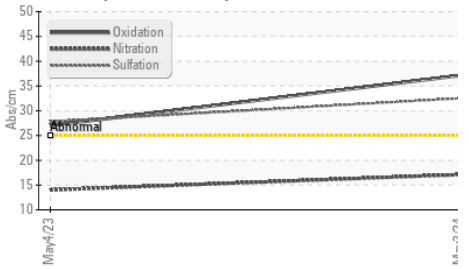
▲ FT-IR (Direct Trend)



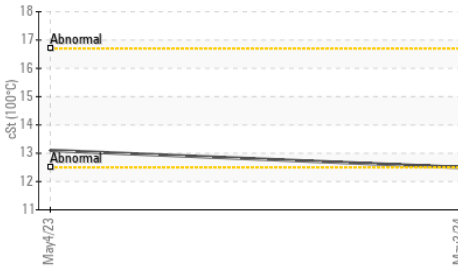
▲ Ferrous Alloys



▲ FT-IR (Direct Trend)



Viscosity @ 100°C

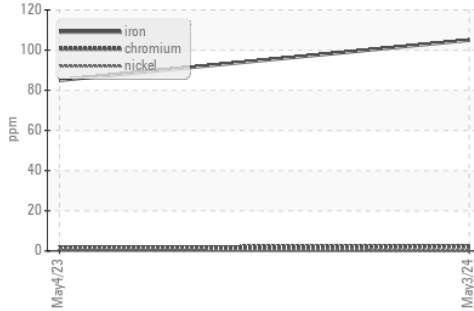


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---
Free Water	scalar	*Visual		NEG	---

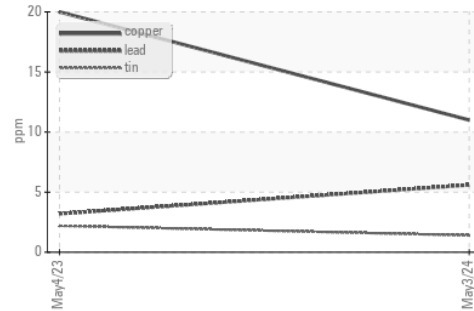
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.5	13.1	---

GRAPHS

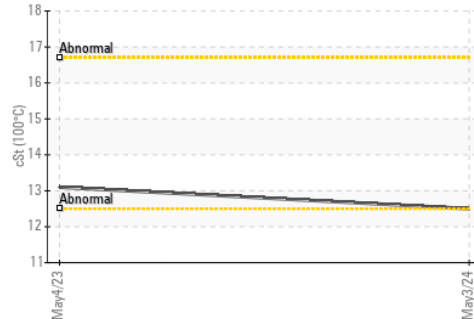
▲ Ferrous Alloys



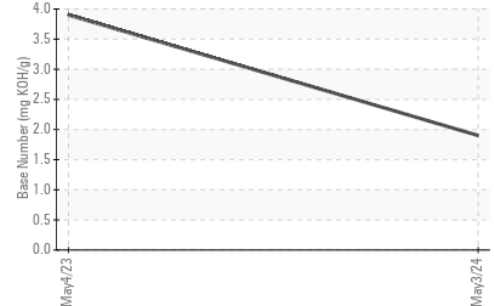
Non-ferrous Metals



Viscosity @ 100°C



▲ Base Number



Certificate L2367

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

Sample No. : NL0002296

Lab Number : 06180811

Unique Number : 11032137

Test Package : FLEET

Received : 15 May 2024

Tested : 16 May 2024

Diagnosed : 18 May 2024 - Jonathan Hester

KIRK NATIONALEASE - SHOP 49

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Lincoln, AL

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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)