



WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
VOLVO EC160 LE1 (S/N VCEC160EH00310491)

Component
Rear Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 15W40 (16 QTS)

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		DE0000662	---	---
Sample Date		Client Info		20 Jun 2024	---	---
Machine Age	hrs	Client Info		2268	---	---
Oil Age	hrs	Client Info		680	---	---
Filter Age	hrs	Client Info		680	---	---
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	>100	31	---	---
Chromium	ppm	ASTM D5185m	>10	1	---	---
Nickel	ppm	ASTM D5185m	>10	<1	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m	>2	0	---	---
Aluminum	ppm	ASTM D5185m	>10	▲ 11	---	---
Lead	ppm	ASTM D5185m	>20	0	---	---
Copper	ppm	ASTM D5185m	>15	3	---	---
Tin	ppm	ASTM D5185m	>10	<1	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

There is no indication of any contamination in the oil.

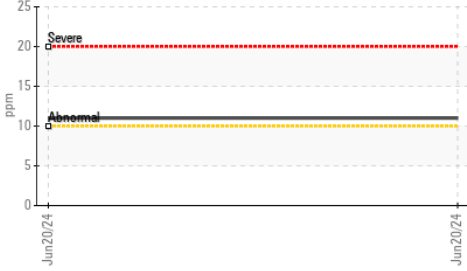
Silicon	ppm	ASTM D5185m	>20	6	---	---
Potassium	ppm	ASTM D5185m	>20	<1	---	---
Fuel		WC Method	>6.0	<1.0	---	---
Water		WC Method	>0.1	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.2	---	---
Nitration	Abs/cm	*ASTM D7624	>20	7.9	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.8	---	---
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

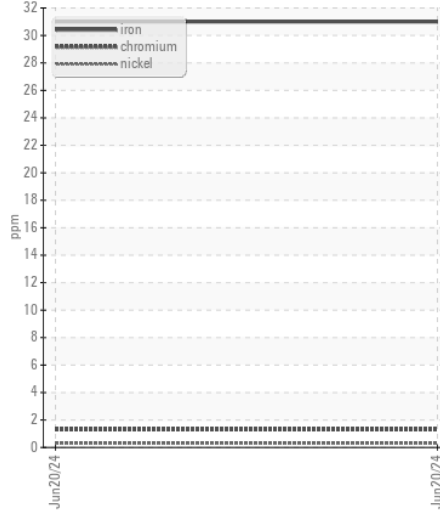
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>158	2	---	---
Boron	ppm	ASTM D5185m	250	6	---	---
Barium	ppm	ASTM D5185m	10	0	---	---
Molybdenum	ppm	ASTM D5185m	100	56	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m	450	890	---	---
Calcium	ppm	ASTM D5185m	3000	1050	---	---
Phosphorus	ppm	ASTM D5185m	1150	1022	---	---
Zinc	ppm	ASTM D5185m	1350	1205	---	---
Sulfur	ppm	ASTM D5185m	4250	3436	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	9.7	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	13.9	---	---

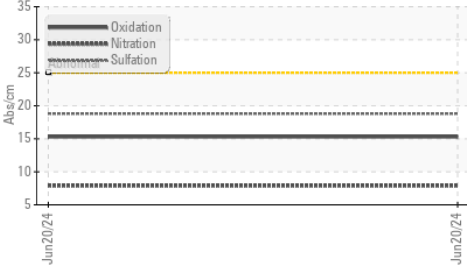
▲ Aluminum (ppm)



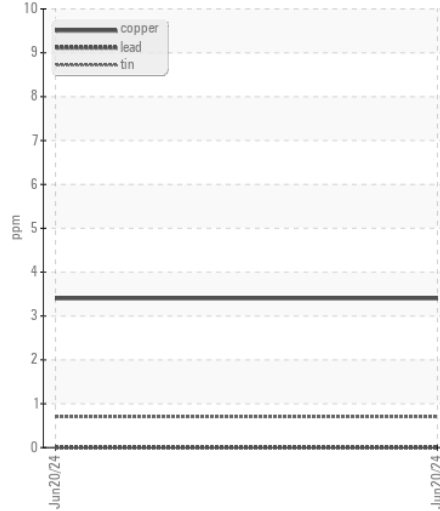
Ferrous Alloys



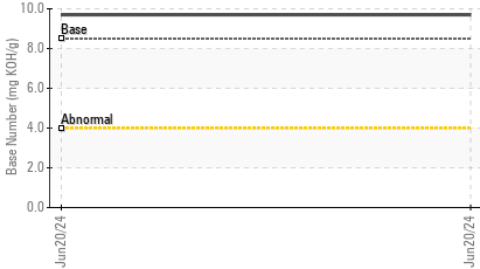
FT-IR (Direct Trend)



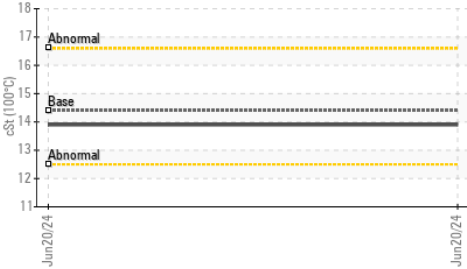
Non-ferrous Metals



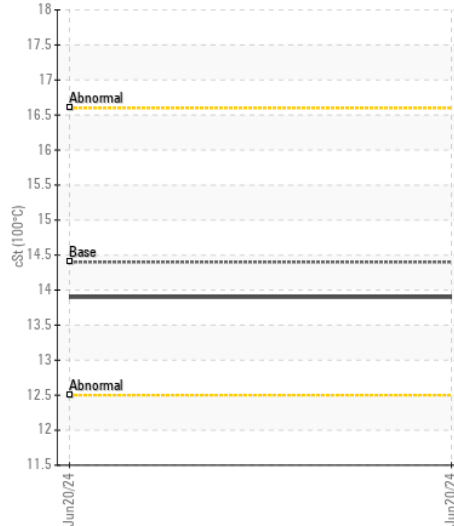
Base Number



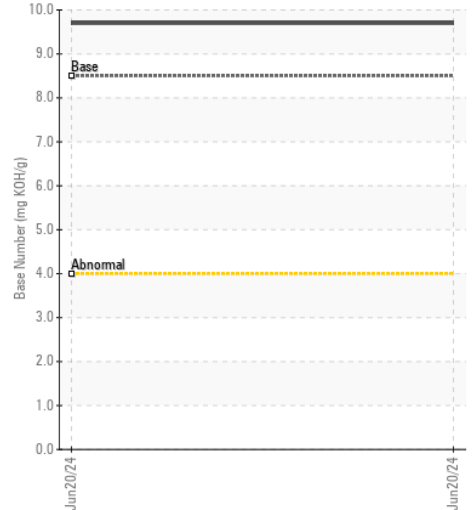
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DE0000662 **Received** : 17 Jul 2024
Lab Number : 06239655 **Tested** : 18 Jul 2024
Unique Number : 11128489 **Diagnosed** : 19 Jul 2024 - Sean Felton
Test Package : FLEET

EARTHTECH DEVELOPERS
 180 SOUTH AVE
 BROCKPORT, NY
 US 14420
 Contact: R. DALLE
 rdalle69@yahoo.com
 T: (585)303-8937
 F:

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)