



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**VOLVO 220E 12 - VOLVO (S/N 3187)**

Component  
**Diesel Engine**

Fluid  
**UNITED OIL DURALENE (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>DC0033383</b>	DC0025356	DC0017134
Sample Date		Client Info		<b>20 Dec 2023</b>	17 Feb 2023	18 Jun 2022
Machine Age	hrs	Client Info		<b>250</b>	250	250
Oil Age	hrs	Client Info		<b>0</b>	0	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	>100	<b>1</b>	4	4
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>&lt;1</b>	1	1
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	<1	1
Copper	ppm	ASTM D5185m	>330	<b>2</b>	3	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

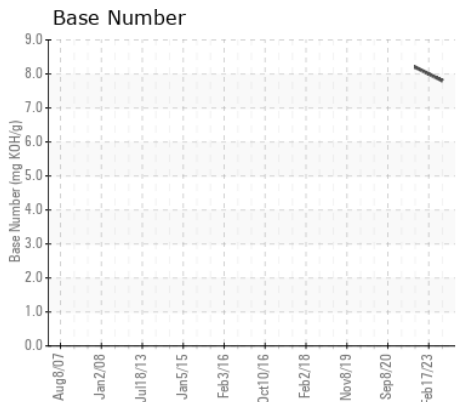
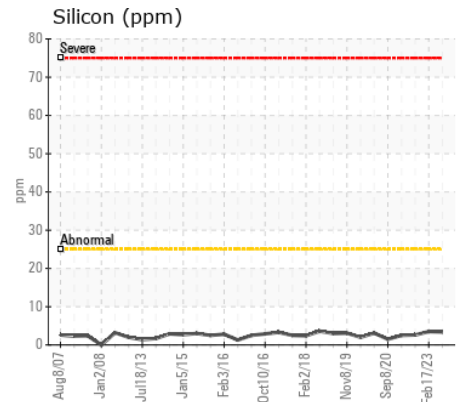
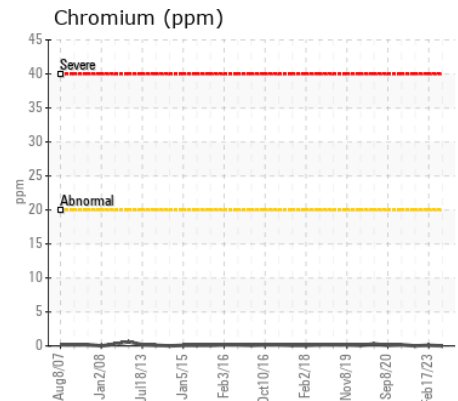
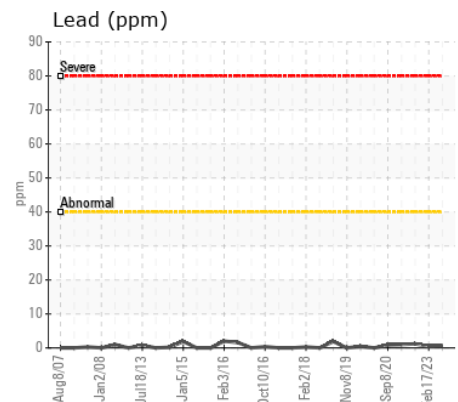
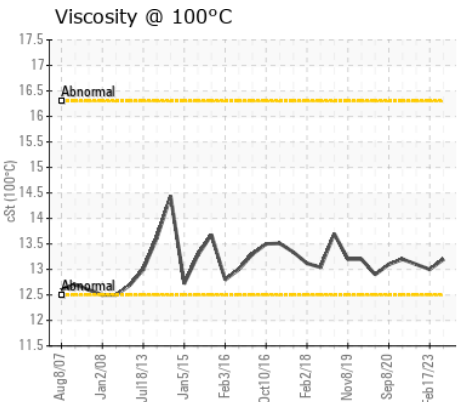
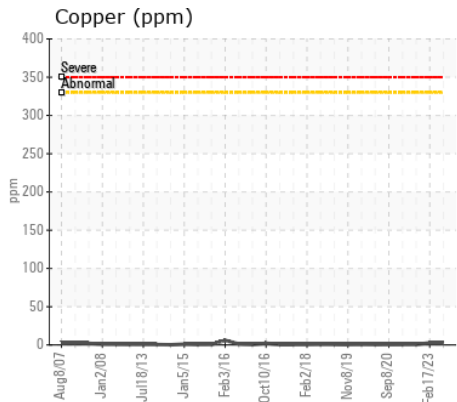
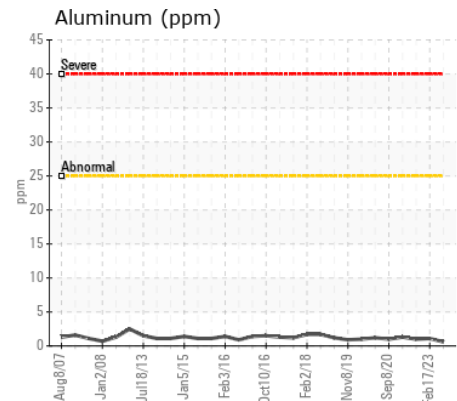
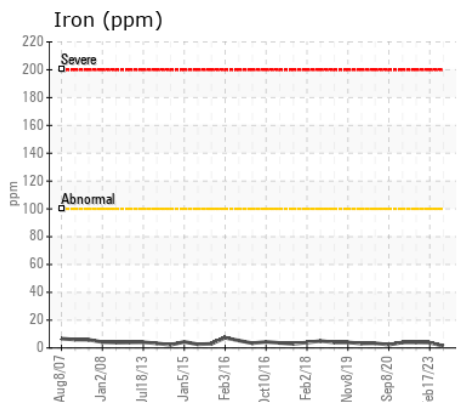
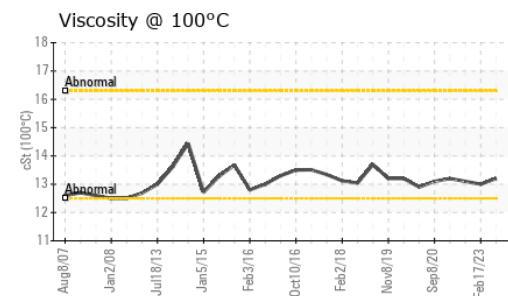
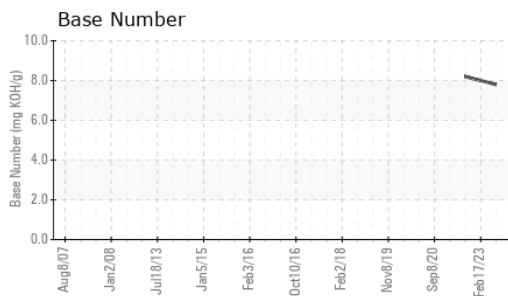
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>3</b>	4	3
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	1	<1
Fuel		WC Method	>6.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.7</b>	6.4	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>14.9</b>	15.9	16.6
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	>0.2	<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>&lt;1</b>	2	2
Boron	ppm	ASTM D5185m		<b>2</b>	5	8
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>2</b>	4	4
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>41</b>	60	54
Calcium	ppm	ASTM D5185m		<b>2159</b>	2440	2444
Phosphorus	ppm	ASTM D5185m		<b>872</b>	872	916
Zinc	ppm	ASTM D5185m		<b>1067</b>	1099	1117
Sulfur	ppm	ASTM D5185m		<b>3652</b>	4428	3905
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>8.7</b>	8.9	9.3
Base Number (BN)	mg KOH/g	ASTM D2896		<b>7.8</b>	8.0	8.2
Visc @ 100°C	cSt	ASTM D445		<b>13.2</b>	13.0	13.1



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DC0033383 **Received** : 10 Jan 2024  
**Lab Number** : 06056479 **Diagnosed** : 11 Jan 2024  
**Unique Number** : 10822428 **Diagnostician** : Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**SIMS ARG**  
 3100 WEEDON STREET  
 BALTIMORE, MD  
 US 21226  
 Contact: MARK NUZZO  
 mark.nuzzo@simsmm.com  
 T: (410)355-1488  
 F: (410)355-5423

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)