



# VOLVO

## OIL ANALYSIS REPORT

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



Area  
**[FRED-DERR]**  
Machine Id  
**VOLVO EC220EL 314441**  
Component  
**Hydraulic System**  
Fluid  
**VOLVO SUPER HYDRAULIC OIL 46 (--- GAL)**

### RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>VCP429447</b>	VCP376247	VCP351196
Sample Date		Client Info		<b>11 Jan 2024</b>	04 Aug 2022	24 Jan 2022
Machine Age	hrs	Client Info		<b>2803</b>	2895	734
Oil Age	hrs	Client Info		<b>0</b>	1500	734
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Changed
Sample Status				<b>ATTENTION</b>	ATTENTION	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>25	<b>4</b>	3	3
Chromium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>20	<b>0</b>	<1	0
Lead	ppm	ASTM D5185m	>20	<b>0</b>	<1	<1
Copper	ppm	ASTM D5185m	>150	<b>29</b>	23	20
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<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

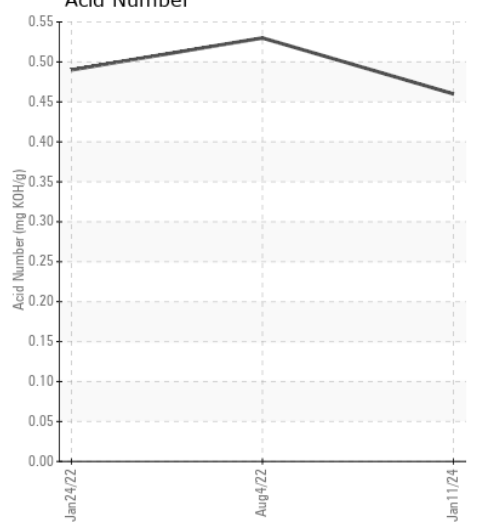
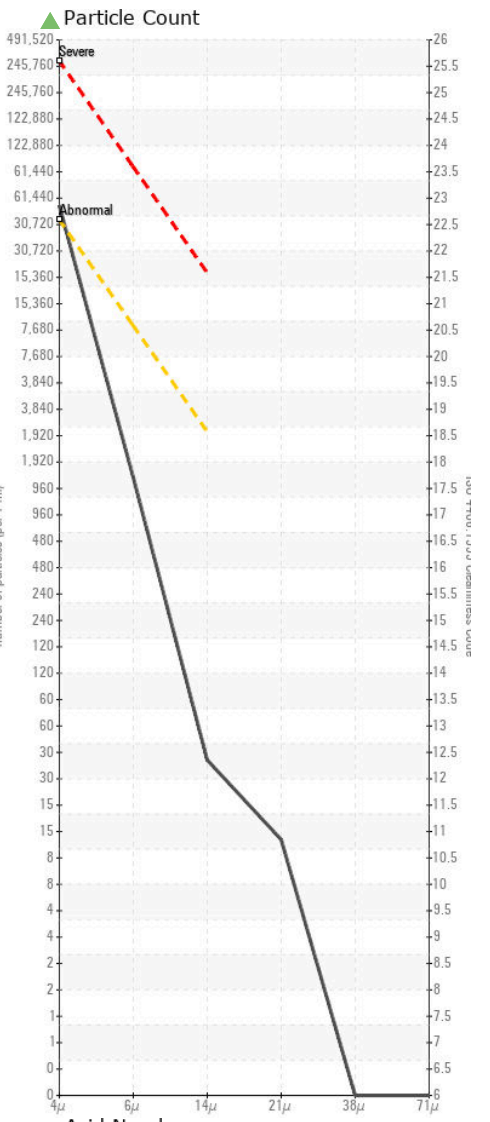
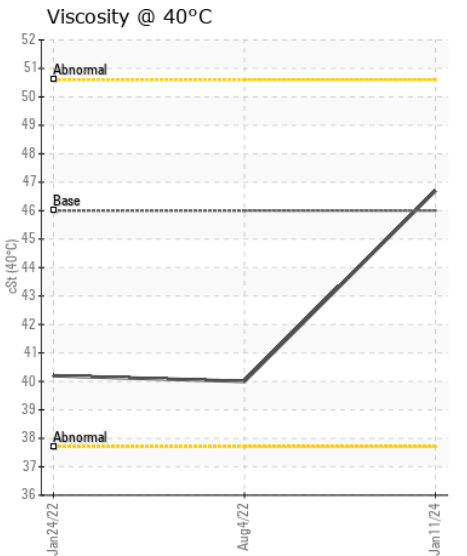
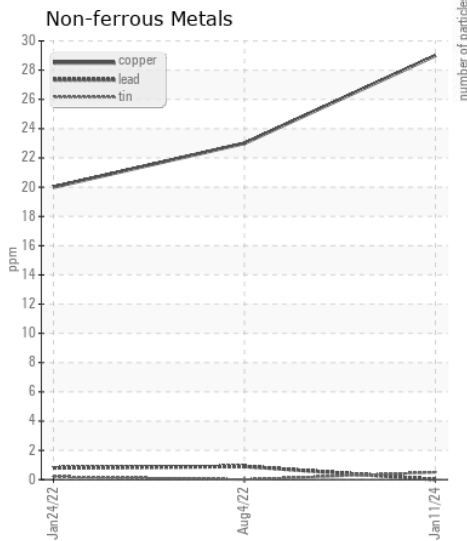
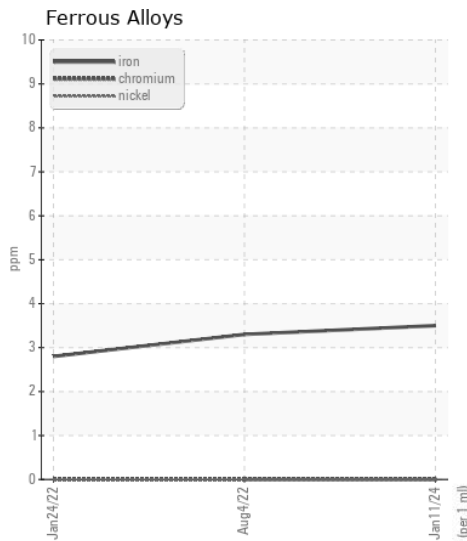
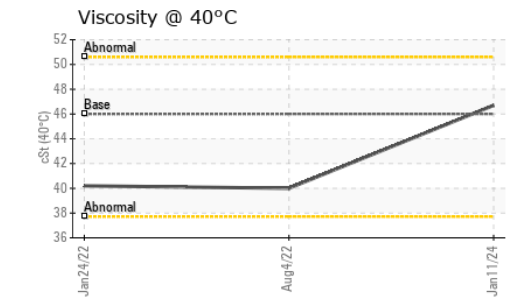
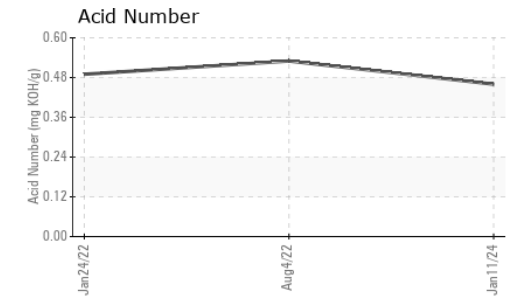
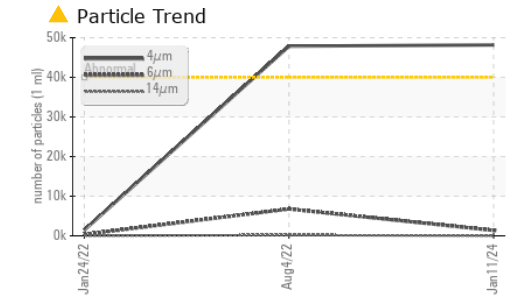
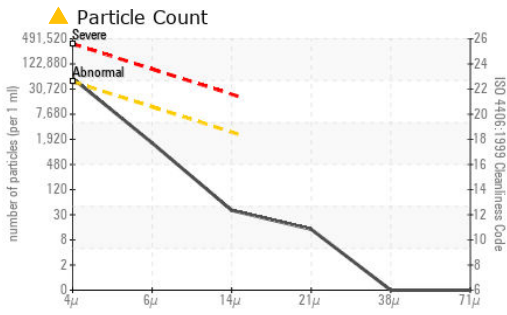
There is a light amount of silt (particulates < 14 microns in size) present in the oil.

Silicon	ppm	ASTM D5185m	>50	<b>4</b>	6	5
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	1	0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>40000	<b>▲ 48183</b>	▲ 47858	1455
Particles >6µm		ASTM D7647	>10000	<b>1374</b>	6776	324
Particles >14µm		ASTM D7647	>2500	<b>34</b>	181	37
Particles >21µm		ASTM D7647	>640	<b>12</b>	27	12
Particles >38µm		ASTM D7647	>160	<b>0</b>	2	2
Particles >71µm		ASTM D7647	>40	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>22/20/18	<b>▲ 23/18/12</b>	▲ 23/20/15	18/16/12
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	LIGHT	VLITE
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	>0.1	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	0	<1
Boron	ppm	ASTM D5185m	14	<b>&lt;1</b>	0	3
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	0.0	<b>1</b>	<1	<1
Manganese	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Magnesium	ppm	ASTM D5185m	2.6	<b>&lt;1</b>	2	1
Calcium	ppm	ASTM D5185m	49	<b>54</b>	93	107
Phosphorus	ppm	ASTM D5185m	354	<b>352</b>	371	437
Zinc	ppm	ASTM D5185m	419	<b>390</b>	481	478
Sulfur	ppm	ASTM D5185m	3719	<b>914</b>	1095	1079
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.46</b>	0.53	0.490
Visc @ 40°C	cSt	ASTM D445	46	<b>46.7</b>	40.0	40.2



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VCP429447  
**Lab Number** : 06083556  
**Unique Number** : 10871001  
**Test Package** : MOB 2  
**Received** : 08 Feb 2024  
**Tested** : 09 Feb 2024  
**Diagnosed** : 09 Feb 2024 - Wes Davis

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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)