



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION



Area
WMR-Salt Lake City
Machine Id
315503 VOLVO EC380E 315503
Component
Diesel Engine
Fluid
VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)

RECOMMENDATION

The oil 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		DJJ0009441	DJJ0008931	---
Sample Date		Client Info		28 Dec 2023	15 Sep 2023	---
Machine Age	hrs	Client Info		601	306	---
Oil Age	hrs	Client Info		300	306	---
Filter Age	hrs	Client Info		300	306	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	ABNORMAL	---

WEAR

The copper level has decreased, but is still abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>100	6	10	---
Chromium	ppm	ASTM D5185m	>10	<1	<1	---
Nickel	ppm	ASTM D5185m	>10	0	<1	---
Titanium	ppm	ASTM D5185m		0	<1	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>10	2	4	---
Lead	ppm	ASTM D5185m	>20	0	1	---
Copper	ppm	ASTM D5185m	>15	▲ 80	▲ 381	---
Tin	ppm	ASTM D5185m	>10	<1	3	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

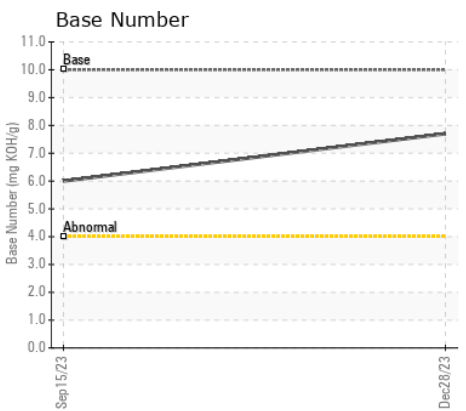
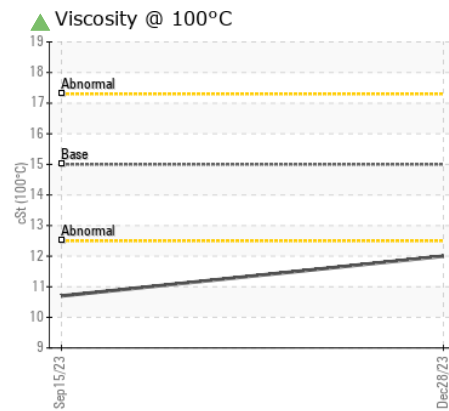
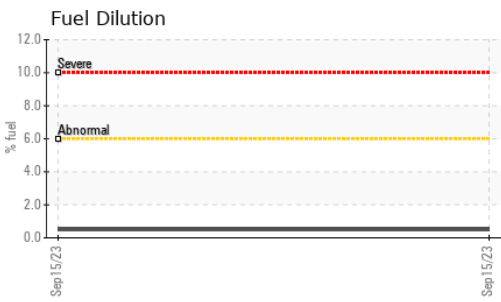
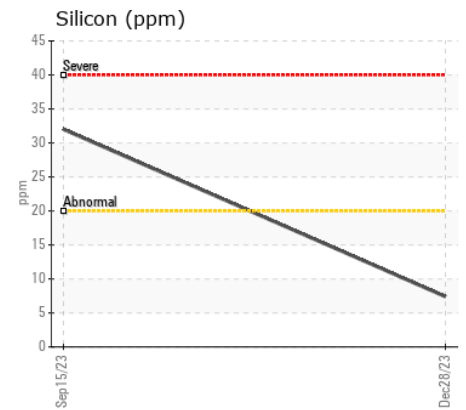
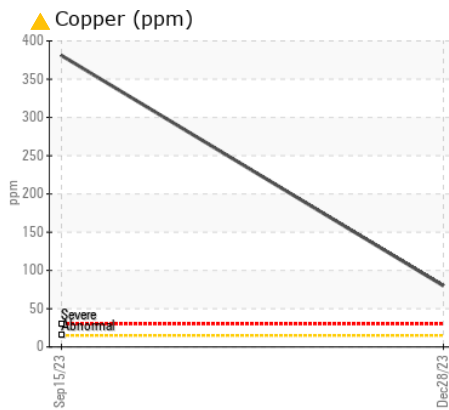
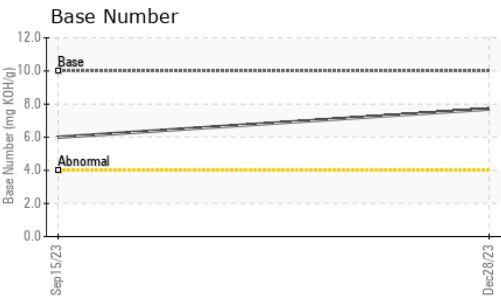
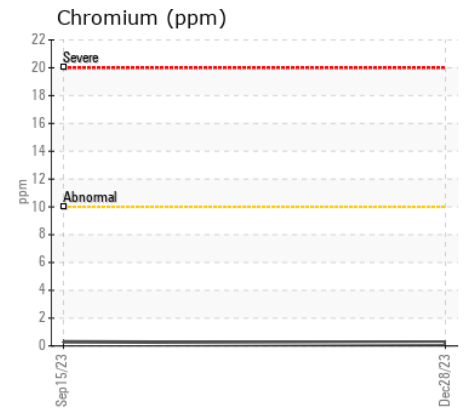
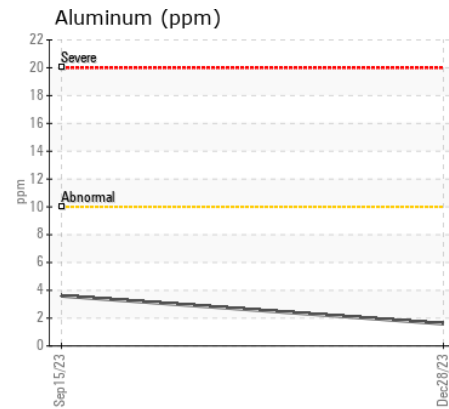
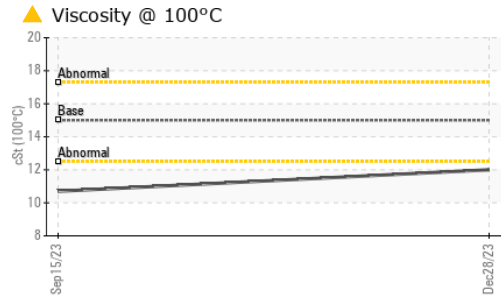
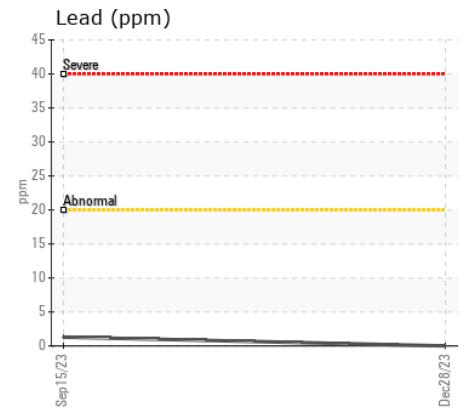
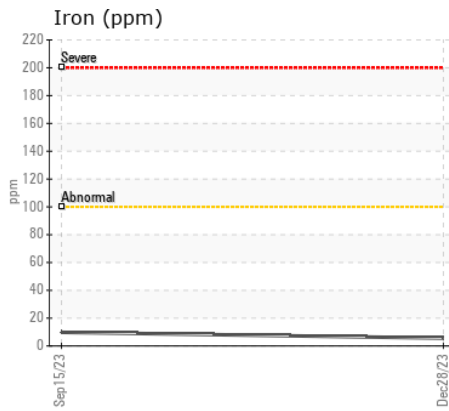
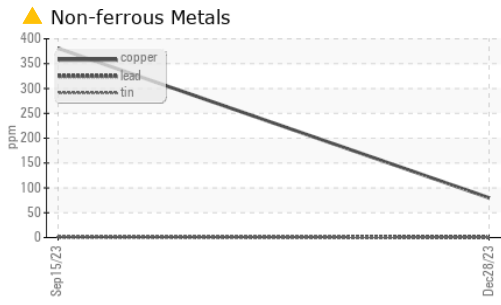
Fuel content negligible. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	7	32	---
Potassium	ppm	ASTM D5185m	>20	1	5	---
Fuel	%	ASTM D3524	>6.0	<1.0	0.5	---
Water		WC Method	>0.1	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	6.9	9.0	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	19.3	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	---

FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		<1	4	---
Boron	ppm	ASTM D5185m	2.5	4	62	---
Barium	ppm	ASTM D5185m	0.0	0	0	---
Molybdenum	ppm	ASTM D5185m	0.7	64	91	---
Manganese	ppm	ASTM D5185m	0.0	0	3	---
Magnesium	ppm	ASTM D5185m	256	866	56	---
Calcium	ppm	ASTM D5185m	2057	1114	2356	---
Phosphorus	ppm	ASTM D5185m	935	1021	1036	---
Zinc	ppm	ASTM D5185m	1223	1178	1281	---
Sulfur	ppm	ASTM D5185m	4079	3334	4541	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	16.3	---
Base Number (BN)	mg KOH/g	ASTM D2896	10	7.7	6.0	---
Visc @ 100°C	cSt	ASTM D445	15.0	▲ 12.0	▲ 10.7	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0009441 **Received** : 09 Jan 2024
Lab Number : 06055742 **Diagnosed** : 10 Jan 2024
Unique Number : 10821691 **Diagnostician** : Sean Felton
Test Package : MOBCE (Additional Tests: FuelDilution, TBN)

WESTERN METALS RECYCLING - SALT LAKE CITY
 4221 WEST 700 SOUTH
 SALT LAKE CITY, UT
 US 84104
 Contact: TIMOTHY SHEFFIELD
 timothy.sheffield@wmrecycling.com
 T: (801)373-4225
 F: (801)975-9590

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)