



# VOLVO

## OIL ANALYSIS REPORT

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

Area  
**TMR-Riviera Beach [SPM700373]**

Machine Id  
**14260 VOLVO L90E 66423**

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. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>VCP453867</b>	VCP341568	DJJ0002792
Sample Date		Client Info		<b>09 Apr 2024</b>	04 Feb 2022	14 Apr 2020
Machine Age	hrs	Client Info		<b>18977</b>	15994	14590
Oil Age	hrs	Client Info		<b>0</b>	0	24
Filter Age	hrs	Client Info		<b>0</b>	0	24
Oil Changed		Client Info		<b>Changed</b>	Changed	Not Changd
Filter Changed		Client Info		<b>N/A</b>	Changed	Not Changd
Sample Status				<b>ABNORMAL</b>	ABNORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>55</b>	24	3
Chromium	ppm	ASTM D5185m	>10	<b>1</b>	<1	0
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>10	<b>5</b>	2	1
Lead	ppm	ASTM D5185m	>20	<b>12</b>	3	<1
Copper	ppm	ASTM D5185m	>15	<b>4</b>	1	0
Tin	ppm	ASTM D5185m	>10	<b>2</b>	<1	0
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

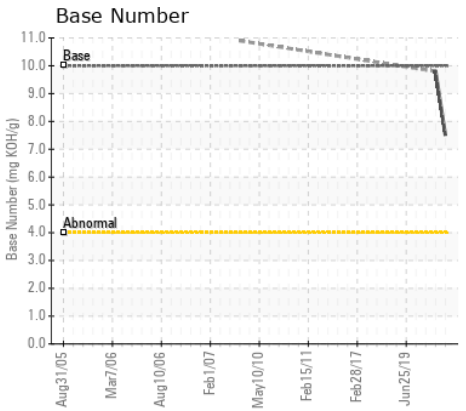
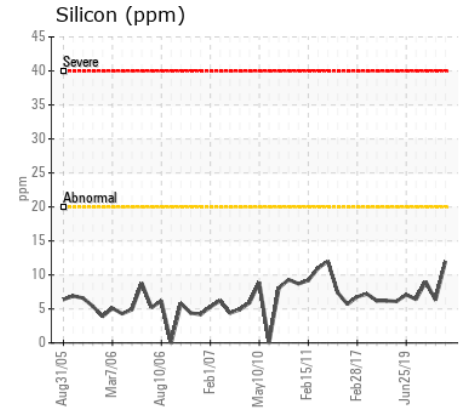
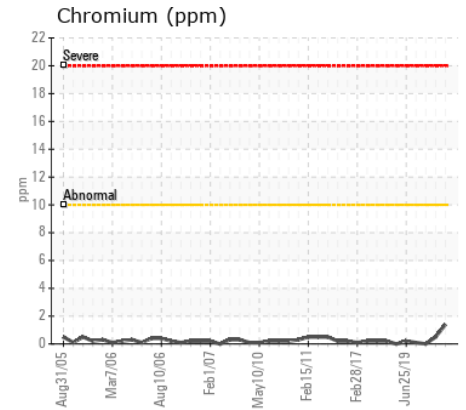
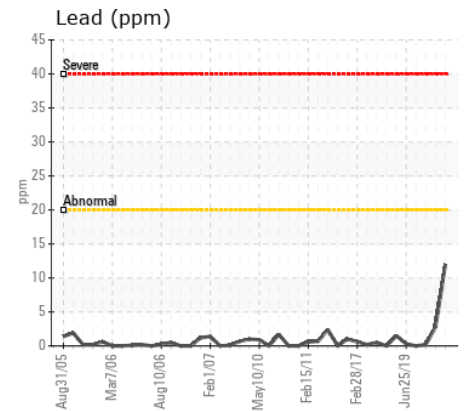
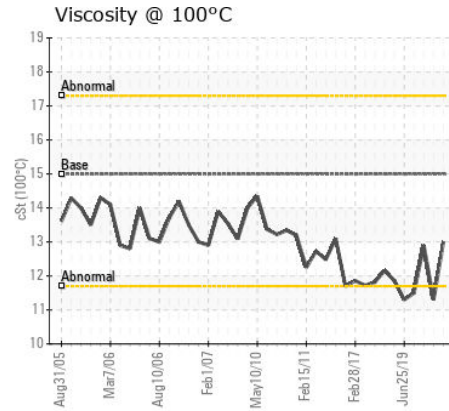
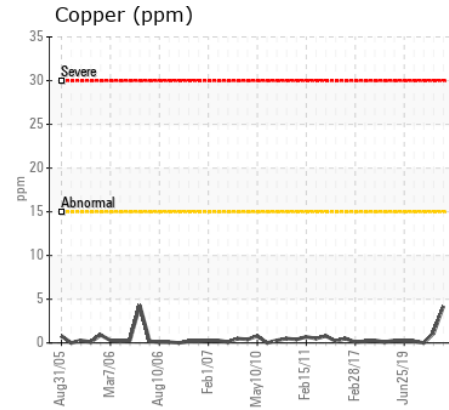
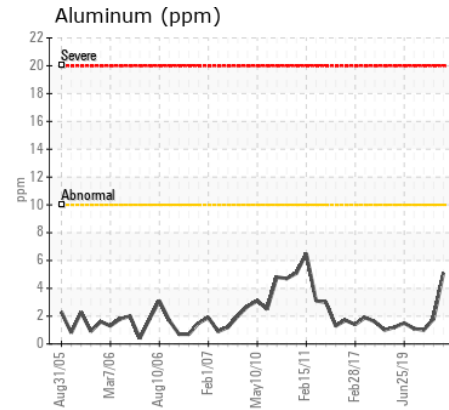
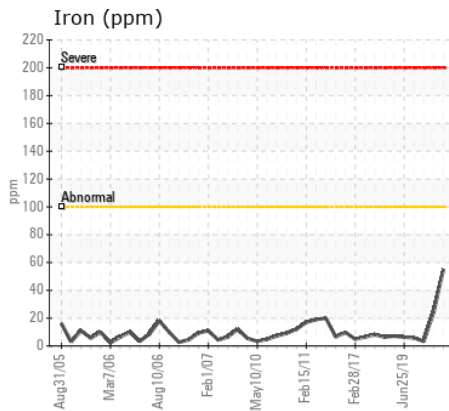
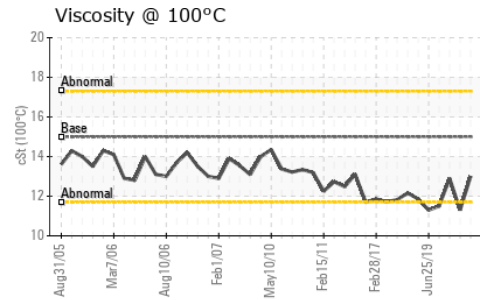
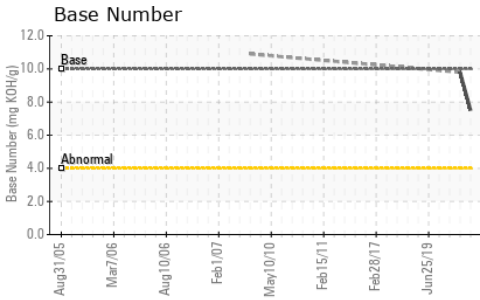
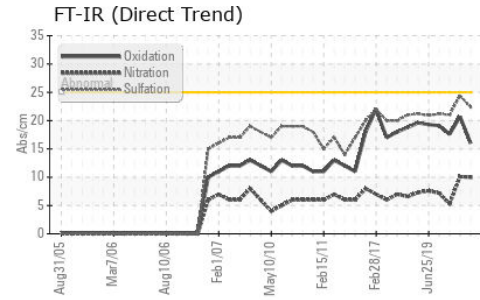
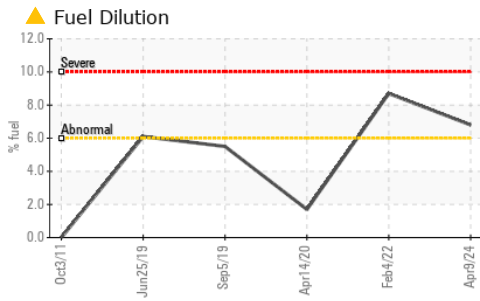
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>12</b>	6	9
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	<1	5
Fuel	%	ASTM D3524	>6.0	<b>▲ 6.8</b>	▲ 8.7	1.7
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.8</b>	1.4	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.0</b>	10.1	5.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.4</b>	24.4	21
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	>0.1	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		<b>3</b>	2	3
Boron	ppm	ASTM D5185m	2.5	<b>2</b>	28	65
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	0.7	<b>96</b>	45	34
Manganese	ppm	ASTM D5185m	0.0	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	256	<b>1556</b>	517	575
Calcium	ppm	ASTM D5185m	2057	<b>1715</b>	1708	1699
Phosphorus	ppm	ASTM D5185m	935	<b>1695</b>	900	871
Zinc	ppm	ASTM D5185m	1223	<b>1994</b>	1056	996
Sulfur	ppm	ASTM D5185m	4079	<b>5055</b>	2459	2367
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.0</b>	20.7	17.6
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>7.5</b>	9.8	---
Visc @ 100°C	cSt	ASTM D445	15.0	<b>13.0</b>	▲ 11.3	12.9



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VCP453867 **Received** : 15 Apr 2024  
**Lab Number** : 06148352 **Tested** : 18 Apr 2024  
**Unique Number** : 10978430 **Diagnosed** : 18 Apr 2024 - Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: PercentFuel, TBN )

**TRADEMARK METALS RECYCLING - RIVIERA BEACH**  
 4661 DYER BLVD  
 WEST PALM BEACH, FL  
 US 33407  
 Contact: RYAN BOWDEN

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)