



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL



Machine Id  
**CATERPILLAR 950F 750 (S/N 4DJ00884)**  
Component  
**Diesel Engine**  
Fluid  
**CHEVRON DELO 400 LE 15W40 (7 GAL)**

## RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. The filter change at the time of sampling has been noted. Resample in 30-45 days to monitor this situation.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KLM2340458</b>	KLM2340462	KLM2340446
Sample Date		Client Info		<b>31 Mar 2022</b>	31 Mar 2021	18 Mar 2020
Machine Age	hrs	Client Info		<b>14882</b>	14821	14747
Oil Age	hrs	Client Info		<b>60</b>	74	101
Filter Age	hrs	Client Info		<b>60</b>	74	101
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>SEVERE</b>	ABNORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>3</b>	4	5
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>4</b>	2	4
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m	>330	<b>6</b>	5	3
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

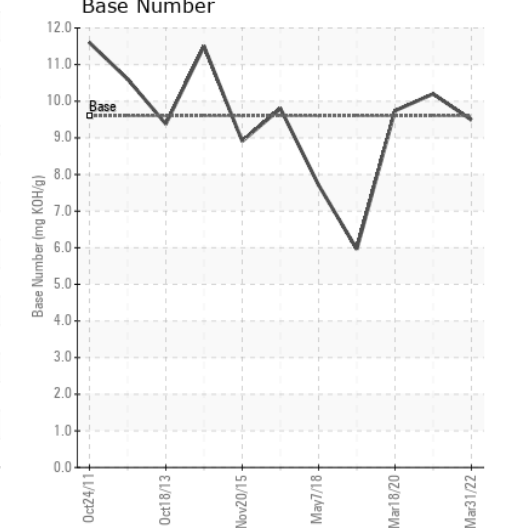
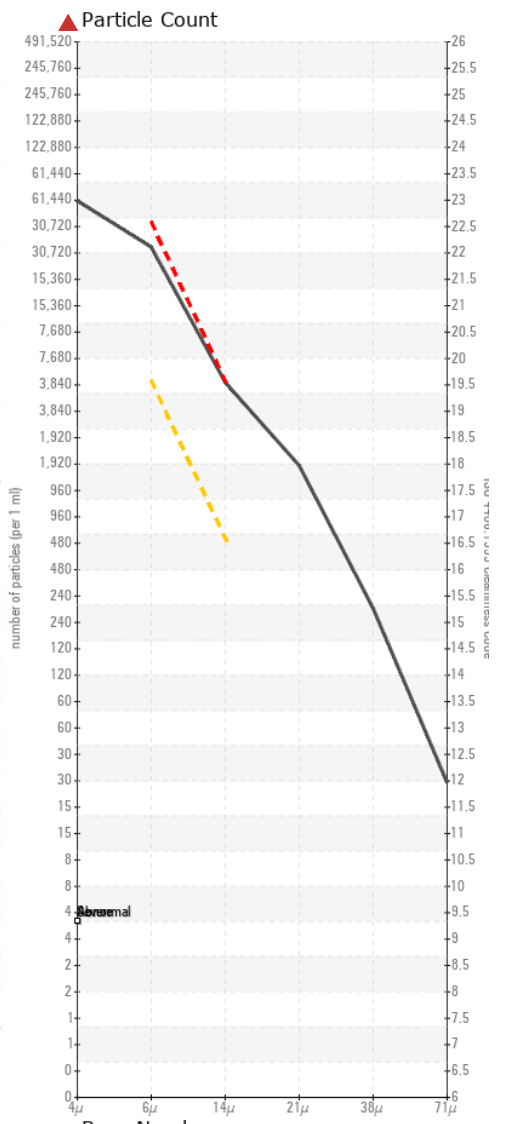
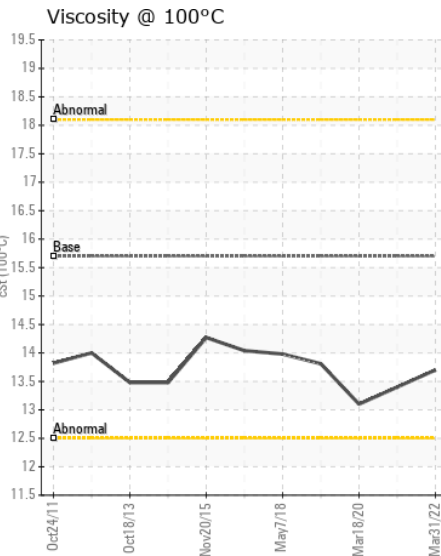
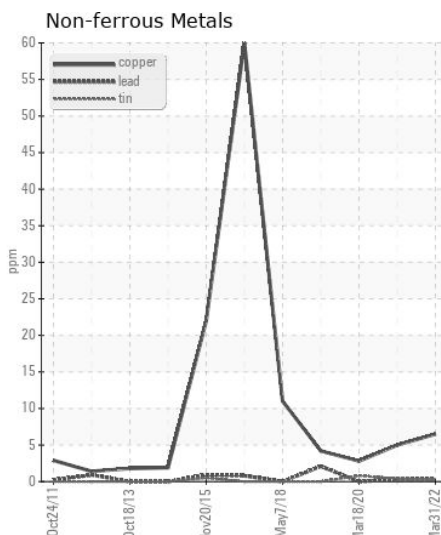
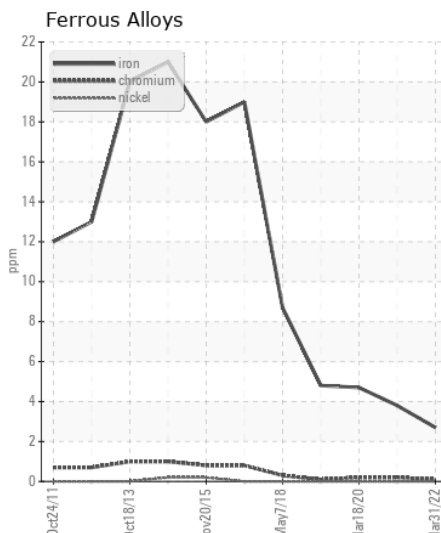
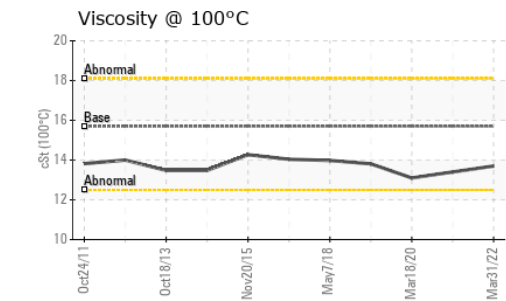
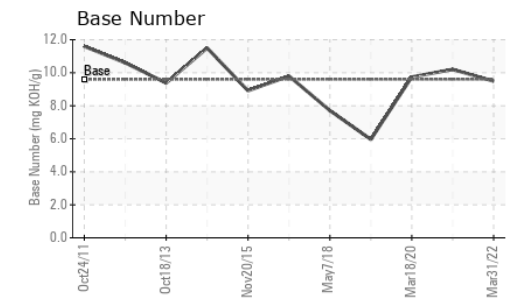
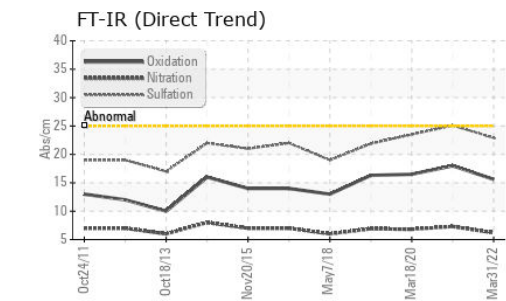
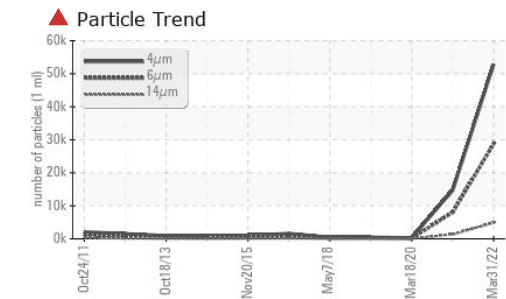
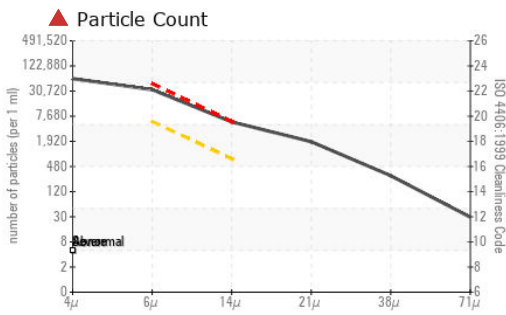
Particles >21µm are severely high. Particles >38µm are abnormally high. Particles >6µm are abnormally high. Particles >71µm are abnormally high. Particles >14µm are abnormally high.

Silicon	ppm	ASTM D5185m	>25	<b>5</b>	4	5
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	2
Fuel		WC Method	>5	<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>0.5</b>	0.6	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.2</b>	7.3	6.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.9</b>	25.1	23.5
Particles >4µm		ASTM D7647		<b>52729</b>	14692	294
Particles >6µm		ASTM D7647	>5000	<b>▲ 28724</b>	● 8003	160
Particles >14µm		ASTM D7647	>640	<b>▲ 4889</b>	▲ 1362	27
Particles >21µm		ASTM D7647	>160	<b>▲ 1647</b>	▲ 459	9
Particles >38µm		ASTM D7647	>40	<b>▲ 254</b>	● 71	1
Particles >71µm		ASTM D7647	>10	<b>▲ 26</b>	7	0
Oil Cleanliness		ISO 4406 (c)	>19/16	<b>▲ 22/19</b>	▲ 20/18	14/12
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>	<1	2
Boron	ppm	ASTM D5185m		<b>358</b>	390	311
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>116</b>	128	114
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>725</b>	690	578
Calcium	ppm	ASTM D5185m		<b>1643</b>	1585	1444
Phosphorus	ppm	ASTM D5185m	1200	<b>763</b>	787	669
Zinc	ppm	ASTM D5185m	1300	<b>855</b>	910	759
Sulfur	ppm	ASTM D5185m	3200	<b>2464</b>	2372	1364
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.6</b>	18	16.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	<b>9.49</b>	10.2	9.74
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.7</b>	13.4	13.1



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KLM2340458 **Received** : 05 Apr 2022  
**Lab Number** : 05511002 **Tested** : 06 Apr 2022  
**Unique Number** : 9920276 **Diagnosed** : 06 Apr 2022 - Wes Davis  
**Test Package** : MOB 2 ( Additional Tests: PrtCount )

**RIVANNA WATER & SEWER AUTHORITY**  
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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)