



# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area  
**RIG 2**  
Machine Id  
**CATERPILLAR 3512 R2-G-04-NKL**  
Component  
**Diesel Engine**  
Fluid  
**CHEVRON 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>KL0014260</b>	KL0014240	KL0013900
Sample Date		Client Info		<b>14 May 2024</b>	03 Apr 2024	15 Feb 2024
Machine Age	days	Client Info		<b>45416</b>	45375	45337
Oil Age	days	Client Info		<b>0</b>	0	0
Filter Age	days	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	ABNORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>5</b>	5	<1
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>3</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>1</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>2</b>	3	4
Lead	ppm	ASTM D5185m	>40	<b>2</b>	3	<1
Copper	ppm	ASTM D5185m	>330	<b>101</b>	▲ 297	92
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

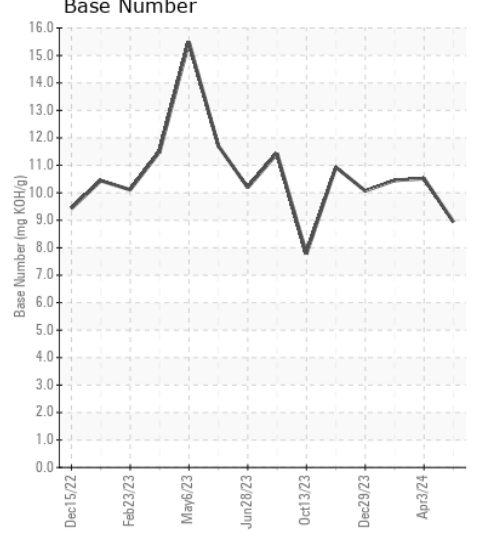
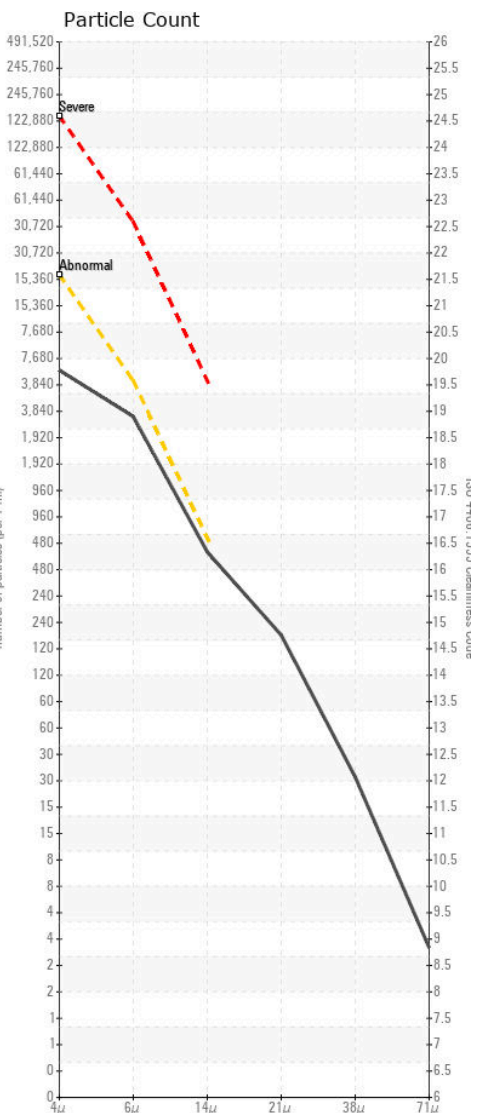
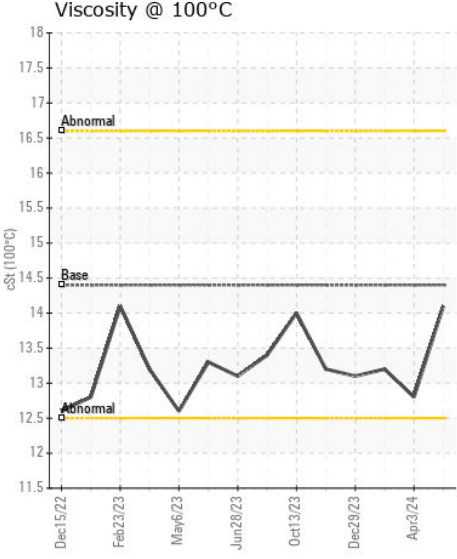
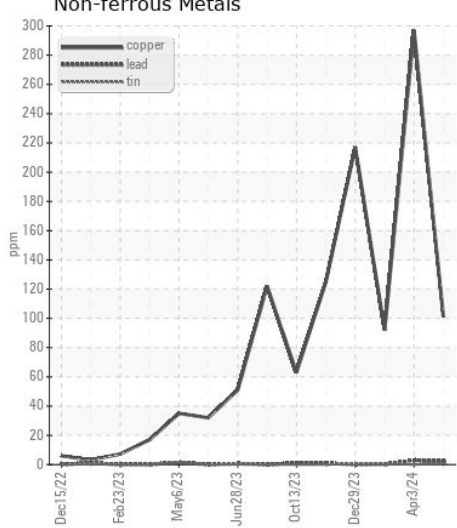
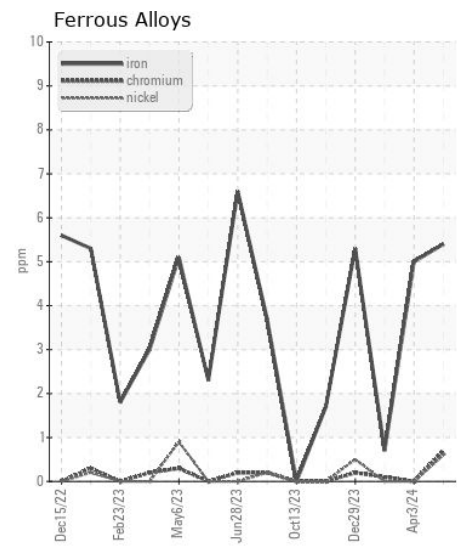
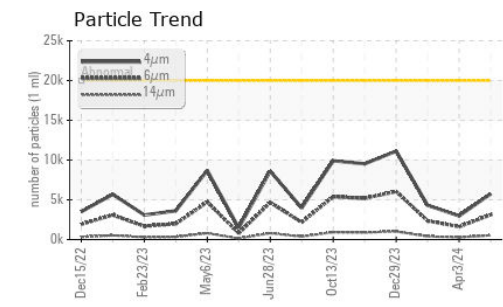
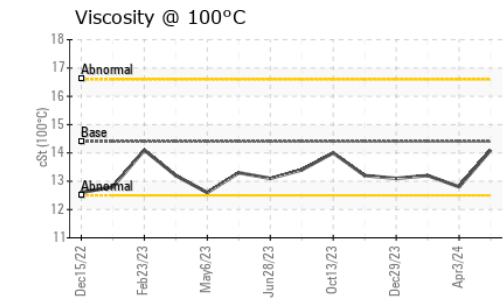
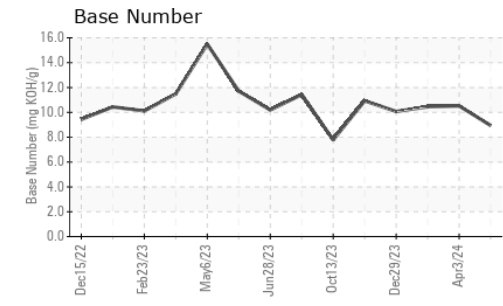
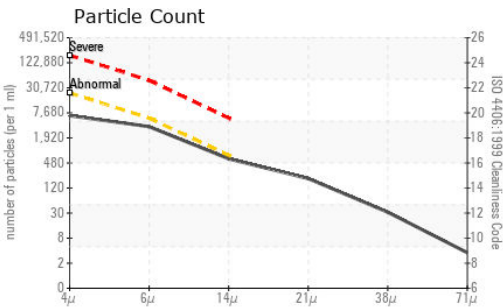
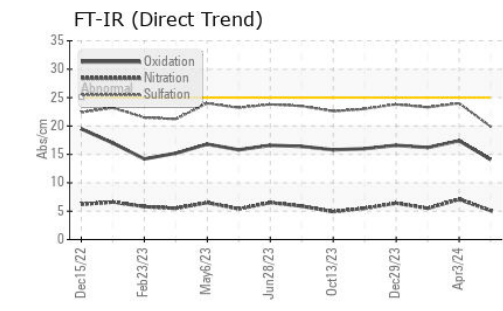
The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>7</b>	5	10
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	0	1
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>0.1</b>	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.1</b>	7.1	5.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.9</b>	24.0	23.3
Particles >4µm		ASTM D7647	>20000	<b>5742</b>	2975	4306
Particles >6µm		ASTM D7647	>5000	<b>3128</b>	1621	2346
Particles >14µm		ASTM D7647	>640	<b>532</b>	276	399
Particles >21µm		ASTM D7647	>160	<b>179</b>	93	134
Particles >38µm		ASTM D7647	>40	<b>28</b>	14	21
Particles >71µm		ASTM D7647	>10	<b>3</b>	1	2
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>20/19/16</b>	19/18/15	19/18/16
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	>50	<b>3</b>	1	<1
Boron	ppm	ASTM D5185m		<b>435</b>	382	338
Barium	ppm	ASTM D5185m		<b>2</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>83</b>	129	119
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>470</b>	663	658
Calcium	ppm	ASTM D5185m		<b>1386</b>	1574	1412
Phosphorus	ppm	ASTM D5185m		<b>887</b>	690	672
Zinc	ppm	ASTM D5185m		<b>1087</b>	785	807
Sulfur	ppm	ASTM D5185m		<b>3314</b>	2756	2370
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.1</b>	17.4	16.2
Base Number (BN)	mg KOH/g	ASTM D2896		<b>8.94</b>	10.52	10.45
Visc @ 100°C	cSt	ASTM D445	14.4	<b>14.1</b>	12.8	13.2



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0014260 **Received** : 24 May 2024  
**Lab Number** : 06191208 **Tested** : 30 May 2024  
**Unique Number** : 11047960 **Diagnosed** : 30 May 2024 - Angela Borella  
**Test Package** : MOB 2 ( Additional Tests: PrtCount )  
 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)

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