



# OIL ANALYSIS REPORT

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



Area  
**RIG 4**  
Machine Id  
**CATERPILLAR 3512 R4-G-03 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>KL0014061</b>	KL0013132	KL0012980
Sample Date		Client Info		<b>12 Dec 2023</b>	03 Nov 2023	13 Sep 2023
Machine Age	days	Client Info		<b>45272</b>	45233	45180
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>	NORMAL	ATTENTION

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>4</b>	2	2
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>2</b>	3	7
Lead	ppm	ASTM D5185m	>40	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185m	>330	<b>3</b>	<1	<1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	0
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

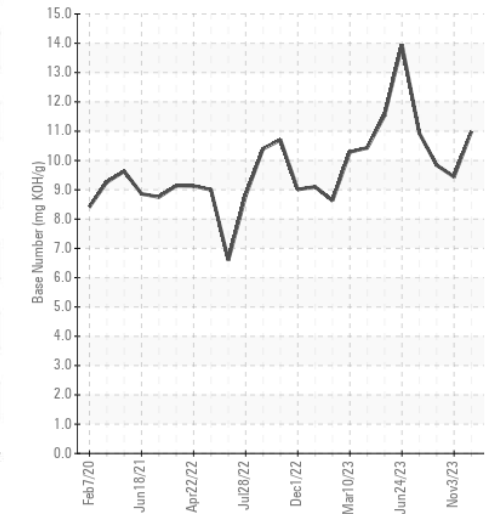
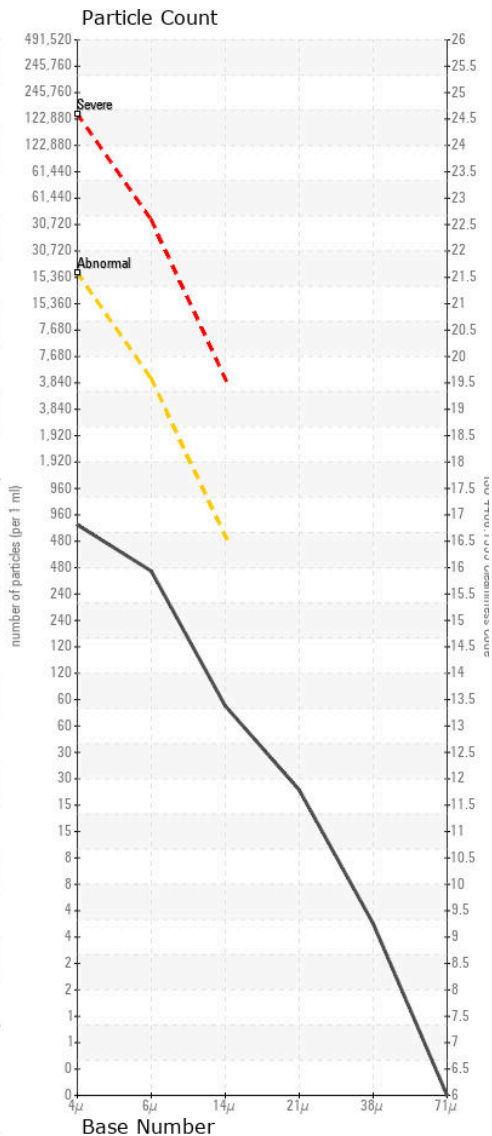
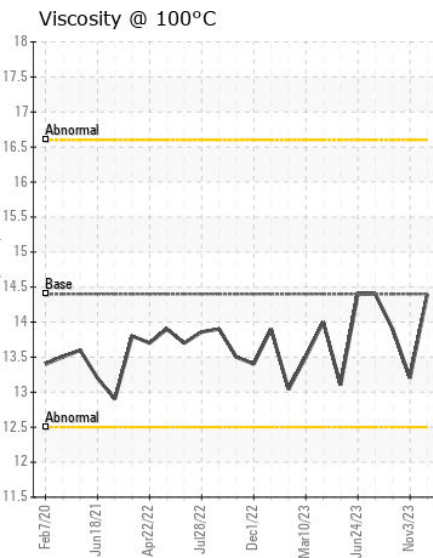
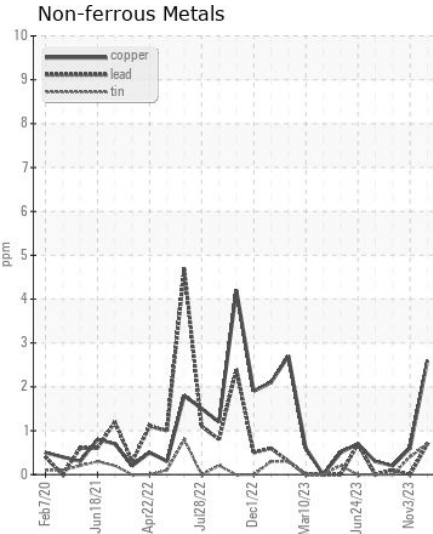
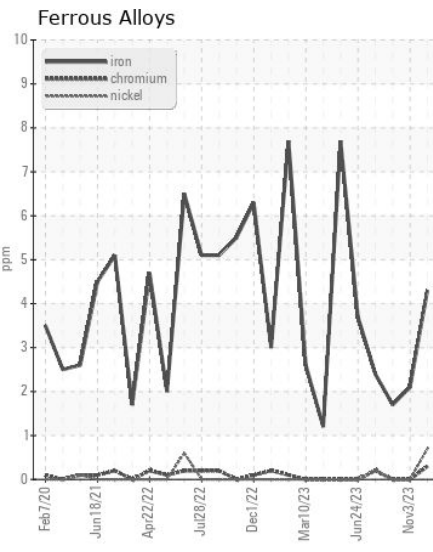
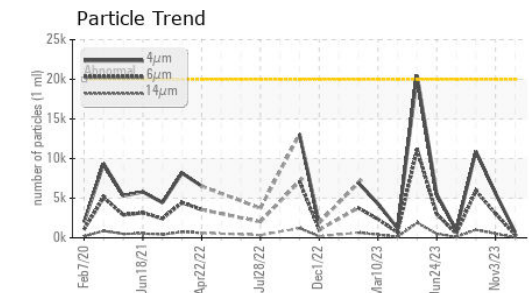
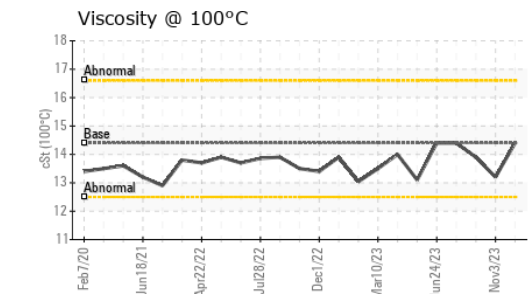
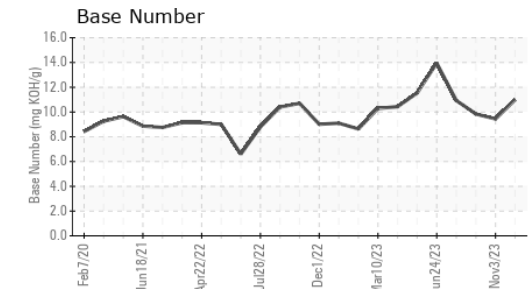
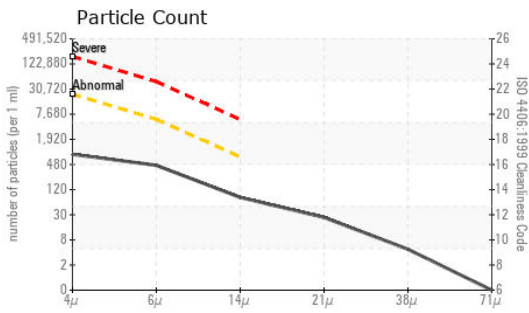
The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>8</b>	16	5
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	0	0
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>4.5</b>	7.7	4.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.4</b>	24.2	21.8
Particles >4µm		ASTM D7647	>20000	<b>739</b>	5629	10901
Particles >6µm		ASTM D7647	>5000	<b>403</b>	3066	▲ 5938
Particles >14µm		ASTM D7647	>640	<b>69</b>	522	▲ 1011
Particles >21µm		ASTM D7647	>160	<b>23</b>	176	▲ 340
Particles >38µm		ASTM D7647	>40	<b>4</b>	27	▲ 53
Particles >71µm		ASTM D7647	>10	<b>0</b>	3	5
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>17/16/13</b>	20/19/16	▲ 21/20/17
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>&lt;1</b>	2	<1
Boron	ppm	ASTM D5185m		<b>362</b>	309	451
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>120</b>	128	130
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>642</b>	673	705
Calcium	ppm	ASTM D5185m		<b>1459</b>	1498	1557
Phosphorus	ppm	ASTM D5185m		<b>666</b>	721	721
Zinc	ppm	ASTM D5185m		<b>802</b>	839	870
Sulfur	ppm	ASTM D5185m		<b>2678</b>	2435	2578
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.3</b>	18.1	14.9
Base Number (BN)	mg KOH/g	ASTM D2896		<b>10.99</b>	9.44	9.84
Visc @ 100°C	cSt	ASTM D445	14.4	<b>14.4</b>	13.2	13.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KL0014061 **Received** : 08 Jan 2024  
**Lab Number** : 06055026 **Diagnosed** : 10 Jan 2024  
**Unique Number** : 10820975 **Diagnostician** : Sean Felton  
**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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