MOB II WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
RIG 1
Machine Id
CATERPILLAR 3512 R1-G-04
Component
Diesel Engine
Fluid
CHEVRON 15W40 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

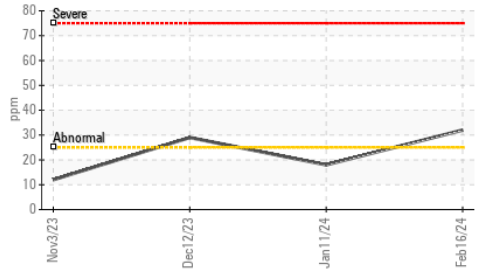
Elemental level of silicon (Si) above normal indicating ingress of seal material. The amount and size of particulates present in the system are acceptable.

FLUID CONDITION

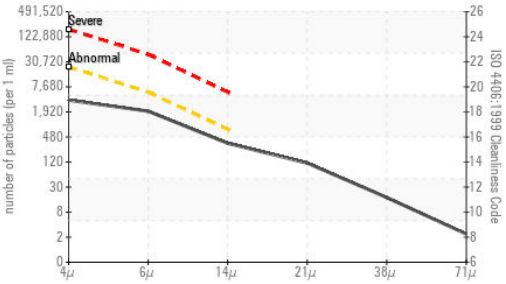
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0013826	KL0014038	KL0014072
Sample Date		Client Info		16 Feb 2024	11 Jan 2024	12 Dec 2023
Machine Age	days	Client Info		45238	45303	45272
Oil Age	days	Client Info		0	0	0
Filter Age	days	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	15	4	6
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	5	3	2
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>330	4	2	4
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	▲ 32	18	▲ 29
Potassium	ppm	ASTM D5185m	>20	4	1	2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	5.2	6.4	7.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.5	22.8	23.3
Particles >4µm		ASTM D7647	>20000	3210	4567	4237
Particles >6µm		ASTM D7647	>5000	1749	2488	2308
Particles >14µm		ASTM D7647	>640	298	423	393
Particles >21µm		ASTM D7647	>160	100	143	132
Particles >38µm		ASTM D7647	>40	15	22	20
Particles >71µm		ASTM D7647	>10	2	2	2
Oil Cleanliness		ISO 4406 (c)	>21/19/16	19/18/15	19/18/16	19/18/16
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m	>50	15	0	0
Boron	ppm	ASTM D5185m		339	358	337
Barium	ppm	ASTM D5185m		2	0	0
Molybdenum	ppm	ASTM D5185m		126	120	120
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		656	642	678
Calcium	ppm	ASTM D5185m		1435	1438	1588
Phosphorus	ppm	ASTM D5185m		703	754	726
Zinc	ppm	ASTM D5185m		837	798	884
Sulfur	ppm	ASTM D5185m		2793	2958	2836
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.7	16.2	17.6
Base Number (BN)	mg KOH/g	ASTM D2896		9.80	7.72	10.11
Visc @ 100°C	cSt	ASTM D445	14.4	13.7	13.0	12.8

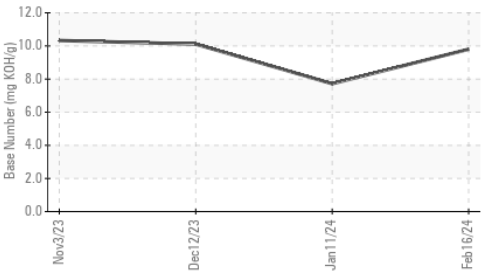
Silicon (ppm)



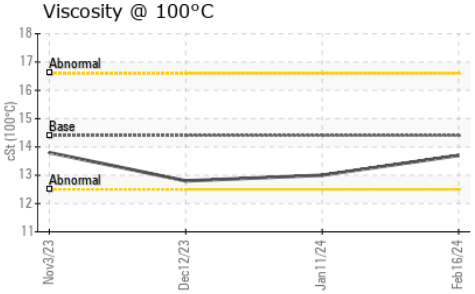
Particle Count



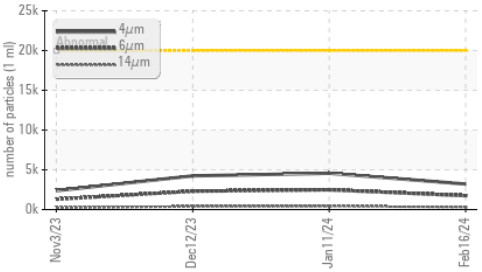
Base Number



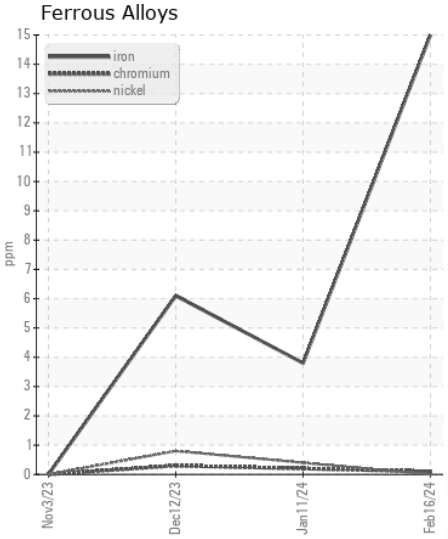
Viscosity @ 100°C



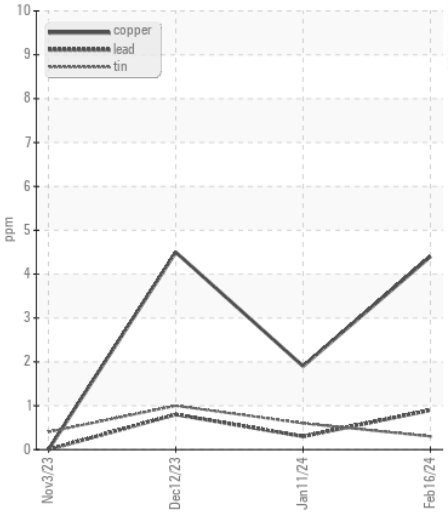
Particle Trend



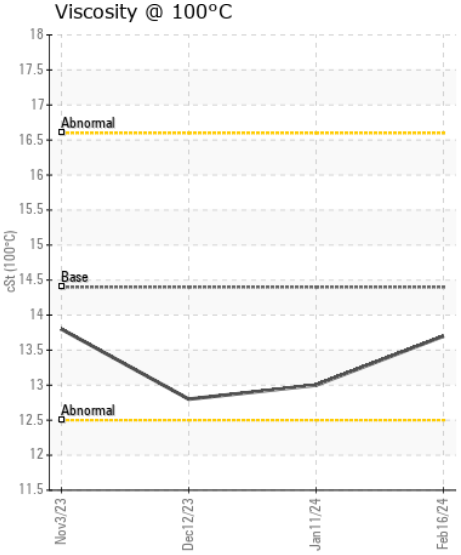
Ferrous Alloys



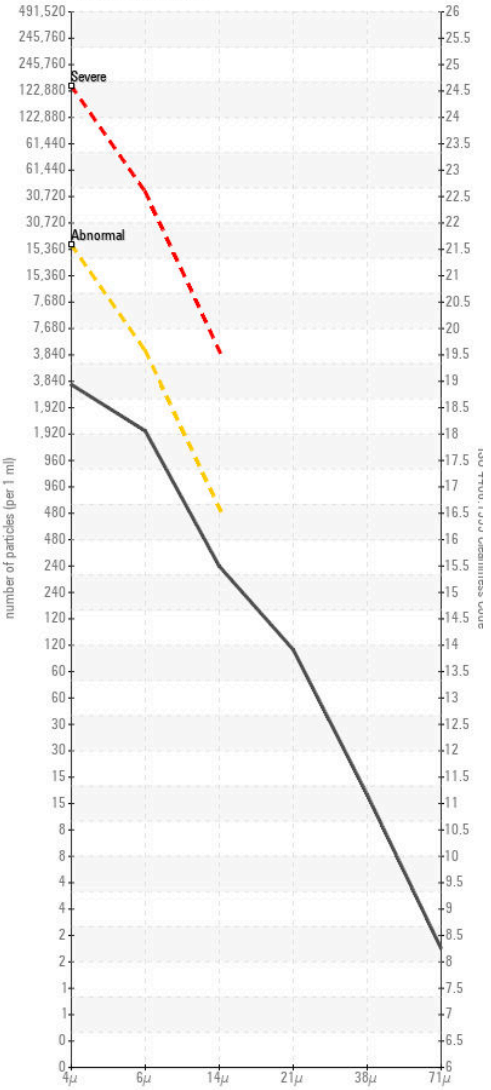
Non-ferrous Metals



Viscosity @ 100°C



Particle Count



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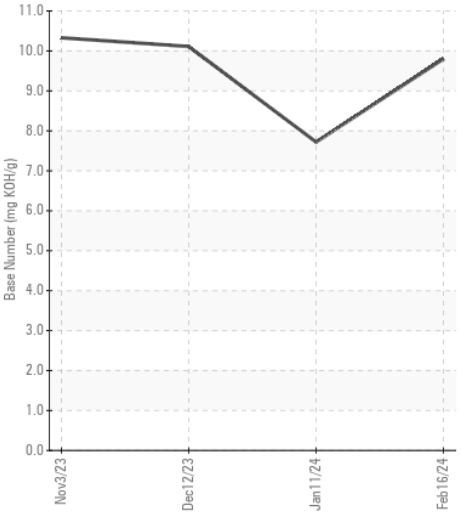

Certificate L2367

Laboratory	: WearCheck USA - 501 Madison Ave., Cary, NC 27513		
Sample No.	: KL0013826	**Received**	: 29 Feb 2024
Lab Number	: 06105406	**Tested**	: 06 Mar 2024
Unique Number	: 10903636	**Diagnosed**	: 06 Mar 2024 - Jonathan Hester
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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