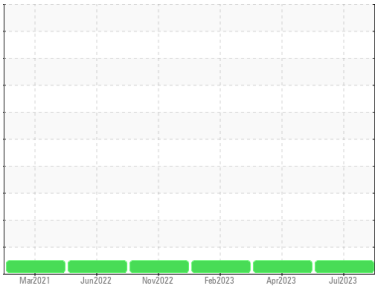
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
35162
Component
Diesel Engine
Fluid
NOT GIVEN (--- QTS)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is no indication of any contamination in the oil. 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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0012004**	KLM2339350	KLM2339354
Sample Date		Client Info		**28 Jul 2023**	08 Apr 2023	12 Feb 2023
Machine Age	mls	Client Info		**105304**	105303	100952
Oil Age	mls	Client Info		**0**	0	100952
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>6.0	**<1.0**	<1.0	<1.0
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**8**	8	5
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**0**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	**2**	<1	<1
Lead	ppm	ASTM D5185m	>40	**<1**	3	2
Copper	ppm	ASTM D5185m	>330	**2**	3	<1
Tin	ppm	ASTM D5185m	>15	**<1**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

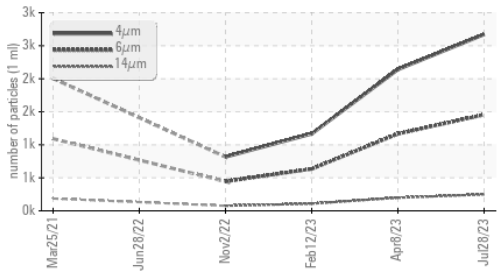
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**55**	49	105
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**54**	50	50
Manganese	ppm	ASTM D5185m		**<1**	<1	1
Magnesium	ppm	ASTM D5185m		**906**	918	911
Calcium	ppm	ASTM D5185m		**1319**	1232	1329
Phosphorus	ppm	ASTM D5185m		**1014**	958	959
Zinc	ppm	ASTM D5185m		**1229**	1198	1256
Sulfur	ppm	ASTM D5185m		**4124**	3955	4002

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**4**	4	6
Sodium	ppm	ASTM D5185m		**4**	3	2
Potassium	ppm	ASTM D5185m	>20	**<1**	2	2

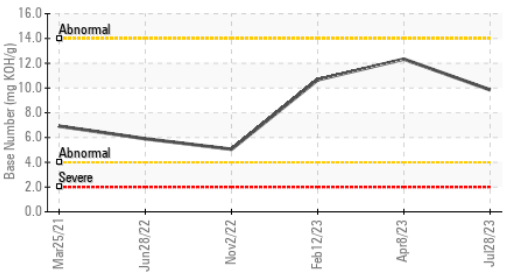
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.2**	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**8.1**	8.4	6.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.3**	21.5	19.4

OIL ANALYSIS REPORT

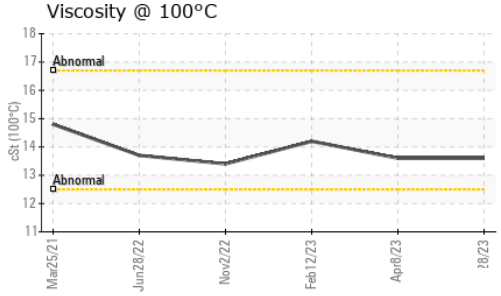
Particle Trend



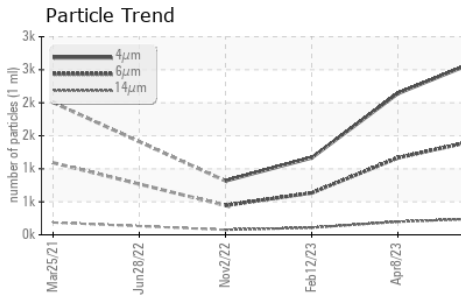
Base Number



Viscosity @ 100°C



Particle Trend



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**2671**	2140	1166
Particles >6µm		ASTM D7647	>5000	**1455**	1166	635
Particles >14µm		ASTM D7647	>640	**248**	198	108
Particles >21µm		ASTM D7647	>160	**83**	67	36
Particles >38µm		ASTM D7647	>40	**13**	10	6
Particles >71µm		ASTM D7647	>10	**1**	1	1
Oil Cleanliness		ISO 4406 (c)	>19/16	**18/15**	17/15	16/14

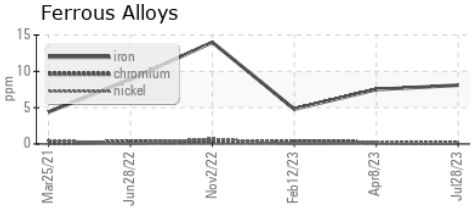
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**17.1**	17.8	14.7
Base Number (BN)	mg KOH/g	ASTM D2896		**9.85**	12.33	10.66

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

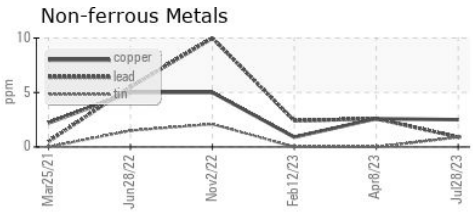
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**13.6**	13.6	14.2

GRAPHS

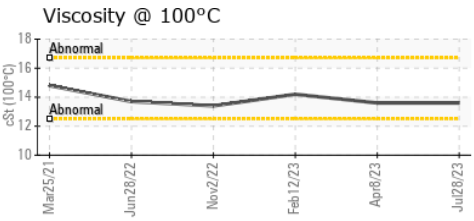
Ferrous Alloys



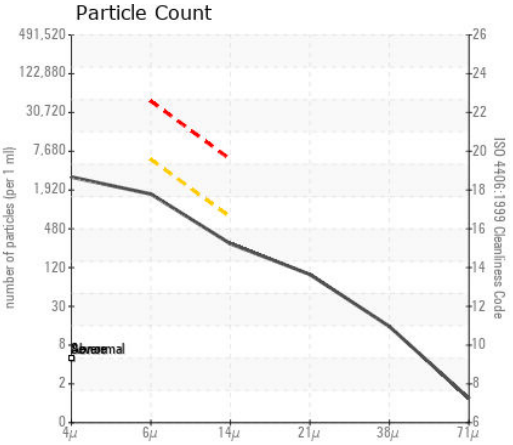
Non-ferrous Metals



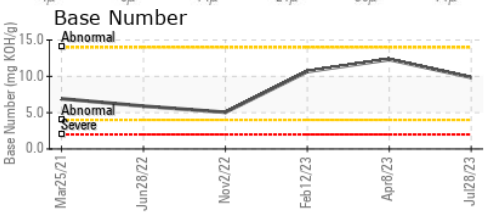
Viscosity @ 100°C



Particle Count



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012004 **Received** : 14 Aug 2023
Lab Number : 05923559 **Diagnosed** : 15 Aug 2023
Unique Number : 10603506 **Diagnostician** : Doug Bogart
Test Package : MOB 2 (Additional Tests: PrtCount)

Certificate L2367

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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