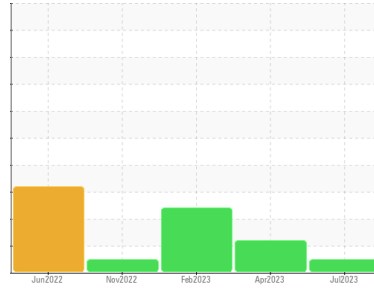




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
27321
 Component
Diesel Engine
 Fluid
NOT GIVEN (--- GAL)

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		KL0012014	KLM2339367	KLM2339288
Sample Date	Client Info		27 Jul 2023	11 Apr 2023	12 Feb 2023
Machine Age	mls	Client Info	37846	34996	31490
Oil Age	mls	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<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	15	41	19
Chromium	ppm	ASTM D5185m >20	<1	1	1
Nickel	ppm	ASTM D5185m >4	0	<1	0
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m >3	0	<1	0
Aluminum	ppm	ASTM D5185m >20	2	3	2
Lead	ppm	ASTM D5185m >40	0	0	<1
Copper	ppm	ASTM D5185m >330	3	13	10
Tin	ppm	ASTM D5185m >15	0	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	79	25	71
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	59	63	59
Manganese	ppm	ASTM D5185m	<1	<1	2
Magnesium	ppm	ASTM D5185m	1110	1155	1143
Calcium	ppm	ASTM D5185m	1074	1034	1058
Phosphorus	ppm	ASTM D5185m	1055	1052	1013
Zinc	ppm	ASTM D5185m	1302	1378	1375
Sulfur	ppm	ASTM D5185m	4094	3719	3791

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	5	8	5
Sodium	ppm	ASTM D5185m	3	4	2
Potassium	ppm	ASTM D5185m >20	4	9	6

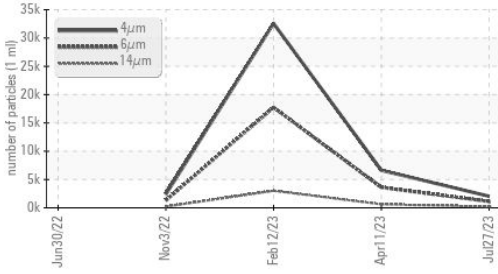
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.5	1.1	0.5
Nitration	Abs/cm	*ASTM D7624 >20	8.2	11.5	8.0
Sulfation	Abs./1mm	*ASTM D7415 >30	21.2	26.3	21.7

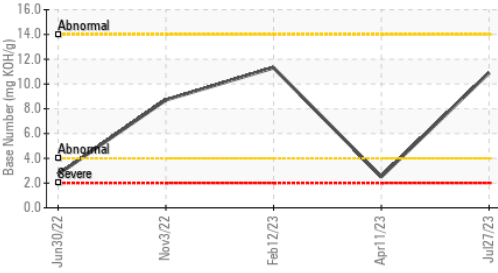


OIL ANALYSIS REPORT

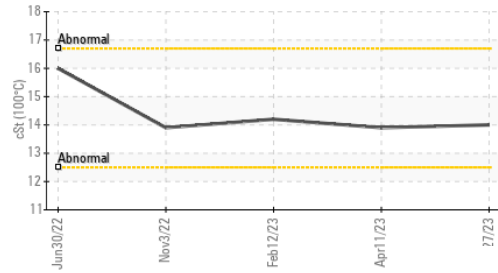
Particle Trend



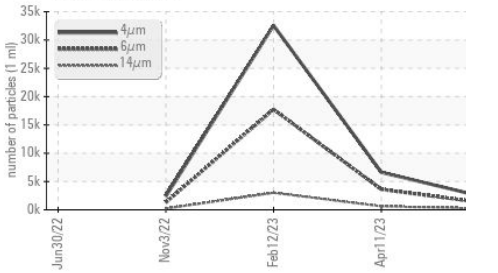
Base Number



Viscosity @ 100°C



Particle Trend



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		2044	6629	32571
Particles >6µm	ASTM D7647	>5000	1114	3611	▲ 17744
Particles >14µm	ASTM D7647	>640	190	615	▲ 3020
Particles >21µm	ASTM D7647	>160	64	207	▲ 1017
Particles >38µm	ASTM D7647	>40	10	32	▲ 157
Particles >71µm	ASTM D7647	>10	1	3	▲ 16
Oil Cleanliness	ISO 4406 (c)	>19/16	17/15	19/16	▲ 21/19

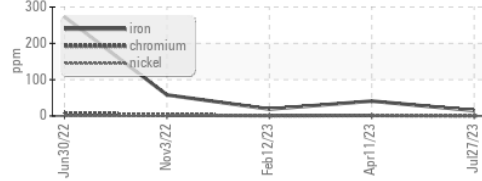
FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.5	26.2	19.1
Base Number (BN)	mg KOH/g	ASTM D2896		10.91	▲ 2.51	11.31

VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

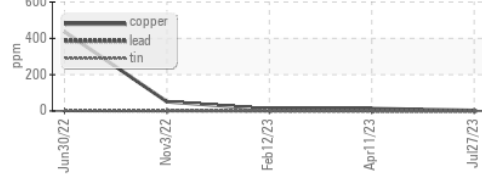
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.0	13.9	14.2

GRAPHS

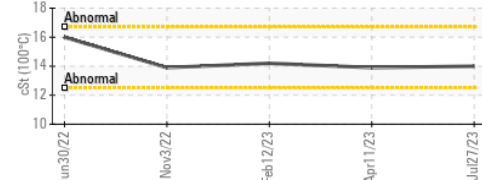
Ferrous Alloys



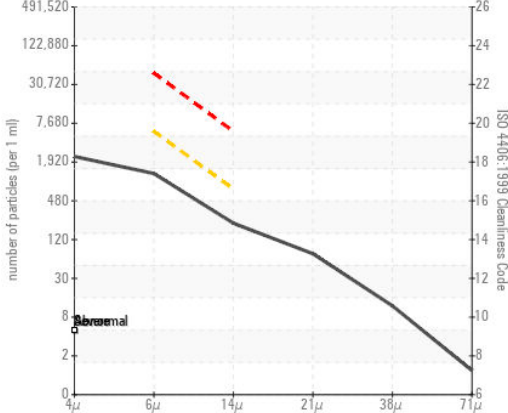
Non-ferrous Metals



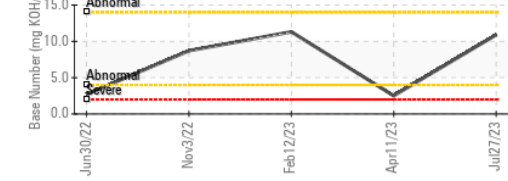
Viscosity @ 100°C



Particle Count



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012014 **Received** : 14 Aug 2023
Lab Number : 05923579 **Diagnosed** : 16 Aug 2023
Unique Number : 10603526 **Diagnostician** : Angela Borella
Test Package : MOB 2 (Additional Tests: PrtCount)

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 F:

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)