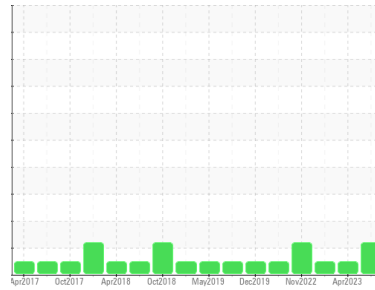




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
AUTOCAR 27242

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

▲ Recommendation

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

▲ Contamination

There is a moderate amount of particulates present in the oil.

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		KL0012051	KLM2340554	KLM2339395
Sample Date	Client Info		25 Jul 2023	10 Apr 2023	13 Feb 2023
Machine Age	mls	Client Info	117798	113658	111333
Oil Age	mls	Client Info	0	0	15534
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			ATTENTION	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>3.0	<1.0	<1.0	<1.0
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>90	23	8	9
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	1	0	1
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	<1	<1	2
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	250	26	60	63
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	68	64	59
Manganese	ppm	ASTM D5185m		<1	<1	1
Magnesium	ppm	ASTM D5185m	450	1118	1115	1127
Calcium	ppm	ASTM D5185m	3000	1031	982	1100
Phosphorus	ppm	ASTM D5185m	1150	1067	1085	1033
Zinc	ppm	ASTM D5185m	1350	1338	1342	1366
Sulfur	ppm	ASTM D5185m	4250	4016	4199	3962

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	8	7	7
Sodium	ppm	ASTM D5185m	>158	4	2	1
Potassium	ppm	ASTM D5185m	>20	<1	1	2

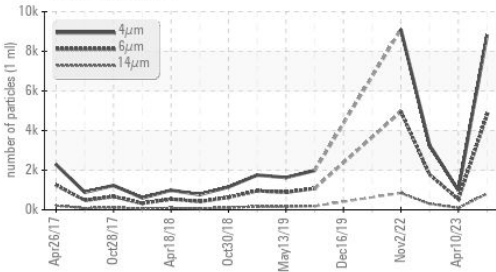
INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844	>6	0.7	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	11.7	8.6	8.9
Sulfation	Abs./1mm	*ASTM D7415	>30	25.6	21.5	21.9

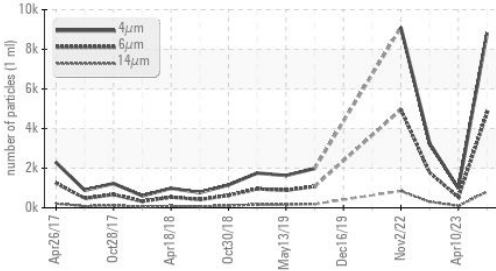


OIL ANALYSIS REPORT

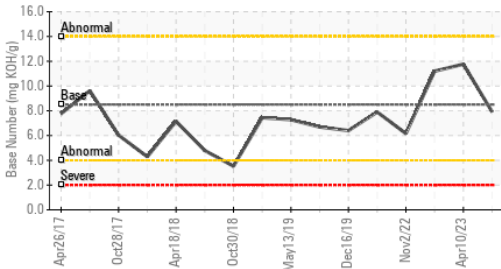
▲ Particle Trend



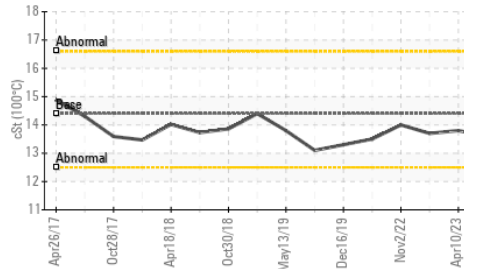
▲ Particle Trend



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS method limit/base current history1 history2

Particles >4µm	ASTM D7647		8822	983	3262
Particles >6µm	ASTM D7647	>5000	4806	536	1777
Particles >14µm	ASTM D7647	>640	▲ 818	91	302
Particles >21µm	ASTM D7647	>160	▲ 275	31	102
Particles >38µm	ASTM D7647	>40	43	5	16
Particles >71µm	ASTM D7647	>10	4	0	2
Oil Cleanliness	ISO 4406 (c)	>19/16	▲ 19/17	16/14	18/15

FLUID DEGRADATION method limit/base current history1 history2

Oxidation	Abs/.1mm	*ASTM D7414	>25	26.1	18.8	19.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.92	11.76	11.20

VISUAL method limit/base current history1 history2

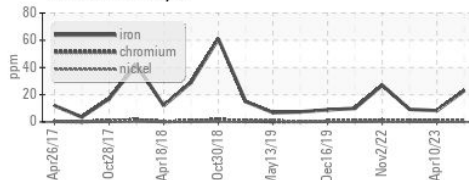
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	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

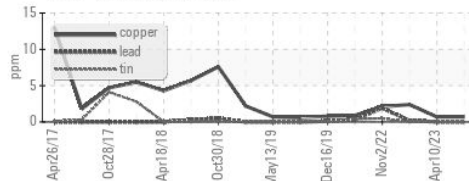
Visc @ 100°C	cSt	ASTM D445	14.4	13.6	13.8	13.7
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GRAPHS

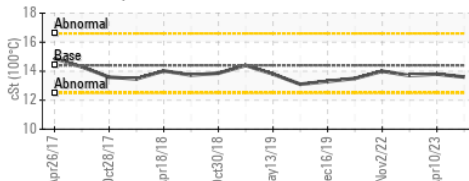
Ferrous Alloys



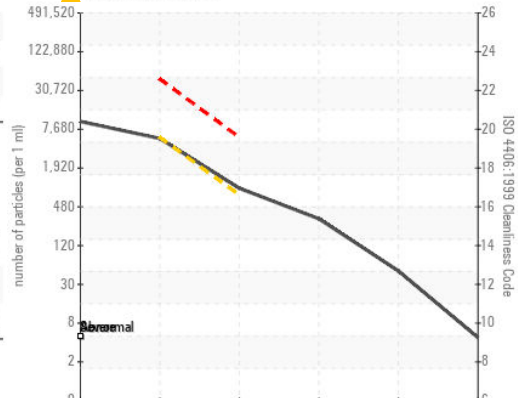
Non-ferrous Metals



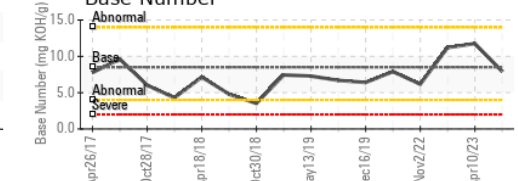
Viscosity @ 100°C



▲ Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012051 **Received** : 14 Aug 2023
Lab Number : 05923575 **Diagnosed** : 16 Aug 2023
Unique Number : 10603522 **Diagnostician** : Angela Borella
Test Package : MOB 2 (Additional Tests: PrtCount)

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 comija@honolulu.gov
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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)