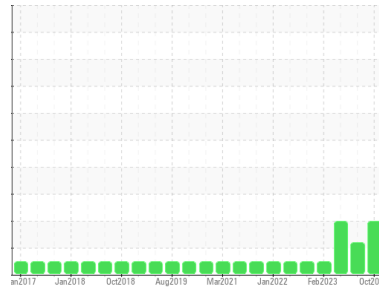




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
27256

Component
Diesel Engine

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

DIAGNOSIS

▲ Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

▲ Contamination

There is a high 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		KL0012110	KL0011938	KLM2339425
Sample Date	Client Info		31 Oct 2023	27 Jul 2023	08 Apr 2023
Machine Age	mls	Client Info	58039	54447	52370
Oil Age	mls	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			ABNORMAL	ATTENTION	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	23	10	36
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >4	0	0	0
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	3	1	3
Lead	ppm	ASTM D5185m >40	<1	0	0
Copper	ppm	ASTM D5185m >330	2	<1	1
Tin	ppm	ASTM D5185m >15	<1	0	<1
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 250	29	95	59
Barium	ppm	ASTM D5185m 10	0	0	0
Molybdenum	ppm	ASTM D5185m 100	63	67	60
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 450	1165	1160	1101
Calcium	ppm	ASTM D5185m 3000	994	1005	1013
Phosphorus	ppm	ASTM D5185m 1150	1085	1098	1072
Zinc	ppm	ASTM D5185m 1350	1385	1337	1331
Sulfur	ppm	ASTM D5185m 4250	3450	4223	4077

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	8	6	6
Sodium	ppm	ASTM D5185m >158	4	2	3
Potassium	ppm	ASTM D5185m >20	4	1	5

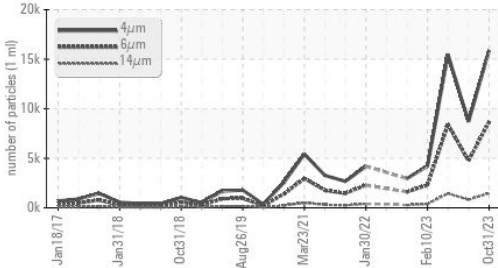
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.9	0.4	2.8
Nitration	Abs/cm	*ASTM D7624 >20	11.7	7.3	12.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	26.0	20.1	29.0

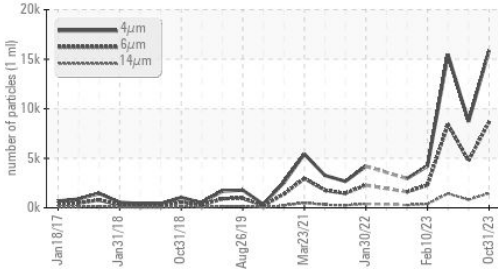


OIL ANALYSIS REPORT

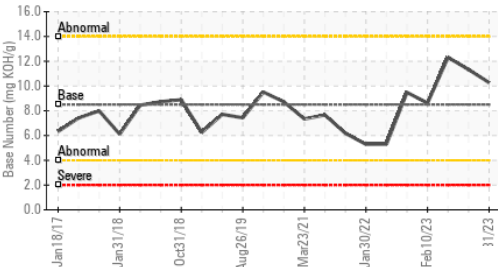
▲ Particle Trend



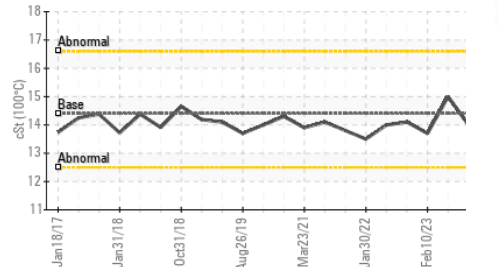
▲ Particle Trend



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		15866	8708	15468
Particles >6µm	ASTM D7647	>5000	▲ 8643	4744	▲ 8426
Particles >14µm	ASTM D7647	>640	▲ 1471	▲ 807	▲ 1434
Particles >21µm	ASTM D7647	>160	▲ 495	▲ 272	▲ 483
Particles >38µm	ASTM D7647	>40	▲ 76	42	▲ 75
Particles >71µm	ASTM D7647	>10	8	4	8
Oil Cleanliness	ISO 4406 (c)	>19/16	▲ 20/18	▲ 19/17	▲ 20/18

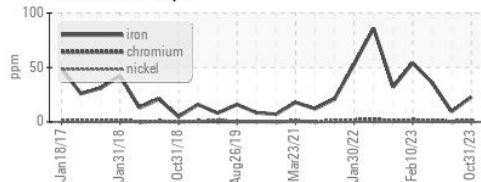
FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414	>25	26.1	17.0	23.5
Base Number (BN)	mg KOH/g ASTM D2896	8.5	10.27	11.33	12.31

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

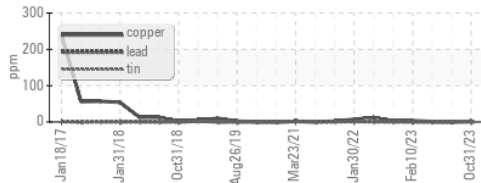
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt ASTM D445	14.4	13.5	14.0	15.0

GRAPHS

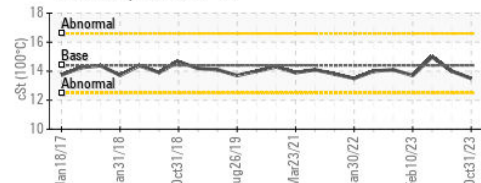
Ferrous Alloys



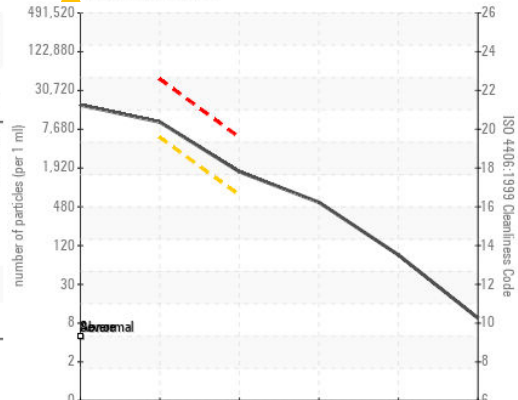
Non-ferrous Metals



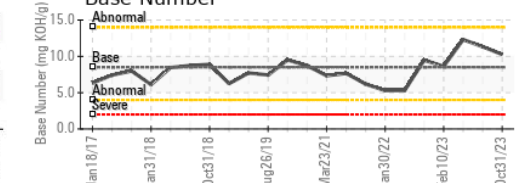
Viscosity @ 100°C



▲ Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : KL0012110 Received : 20 Nov 2023
 Lab Number : 06013465 Diagnosed : 23 Nov 2023
 Unique Number : 10752609 Diagnostician : Don Baldrige
 Test Package : MOB 2 (Additional Tests: PrtCount)

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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)