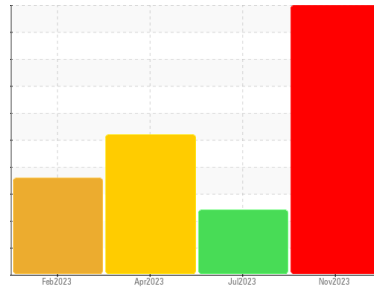




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id
27249
 Component
Diesel Engine
 Fluid
NOT GIVEN (--- QTS)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. 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.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		KL0012077	KL0012054	KLM2339321
Sample Date	Client Info		10 Nov 2023	25 Jul 2023	07 Apr 2023
Machine Age	mls	Client Info	112904	108832	104119
Oil Age	mls	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			SEVERE	ABNORMAL	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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	70	28	▲ 104
Chromium	ppm	ASTM D5185m >20	2	1	3
Nickel	ppm	ASTM D5185m >4	<1	0	<1
Titanium	ppm	ASTM D5185m	1	<1	<1
Silver	ppm	ASTM D5185m >3	0	0	<1
Aluminum	ppm	ASTM D5185m >20	9	4	16
Lead	ppm	ASTM D5185m >40	<1	0	0
Copper	ppm	ASTM D5185m >330	2	<1	2
Tin	ppm	ASTM D5185m >15	<1	0	0
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	30	80	23
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	71	74	70
Manganese	ppm	ASTM D5185m	<1	<1	1
Magnesium	ppm	ASTM D5185m	1040	1035	1082
Calcium	ppm	ASTM D5185m	1077	1085	1014
Phosphorus	ppm	ASTM D5185m	1236	1153	1085
Zinc	ppm	ASTM D5185m	1288	1283	1309
Sulfur	ppm	ASTM D5185m	3569	4196	4043

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	18	9	24
Sodium	ppm	ASTM D5185m	▲ 262	▲ 119	▲ 294
Potassium	ppm	ASTM D5185m >20	▲ 424	▲ 163	▲ 279
Glycol	%	*ASTM D2982	● 0.10	NEG	NEG

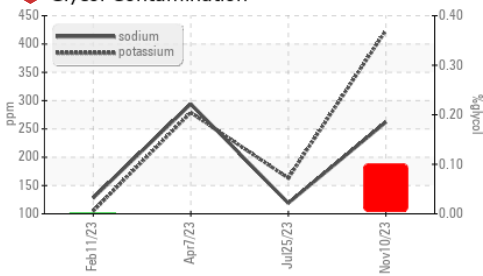
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.8	0.3	1.2
Nitration	Abs/cm	*ASTM D7624 >20	12.1	7.7	15.7
Sulfation	Abs./1mm	*ASTM D7415 >30	27.2	20.4	33.9

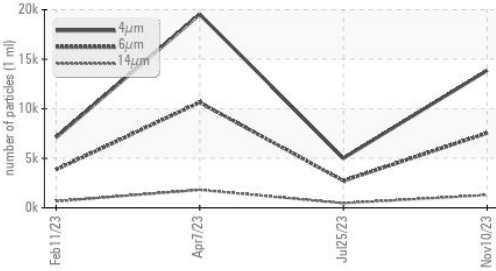


OIL ANALYSIS REPORT

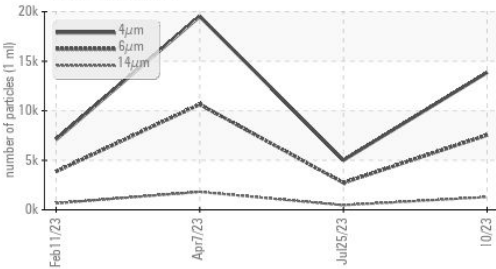
Glycol Contamination



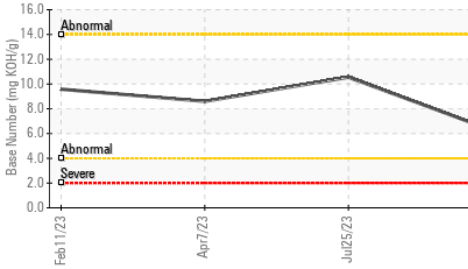
Particle Trend



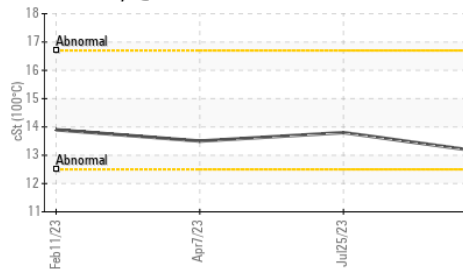
Particle Trend



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		13858	5002	19523
Particles >6µm	ASTM D7647	>5000	7550	2725	10635
Particles >14µm	ASTM D7647	>640	1285	464	1810
Particles >21µm	ASTM D7647	>160	433	156	610
Particles >38µm	ASTM D7647	>40	67	24	94
Particles >71µm	ASTM D7647	>10	7	2	10
Oil Cleanliness	ISO 4406 (c)	>19/16	20/17	19/16	21/18

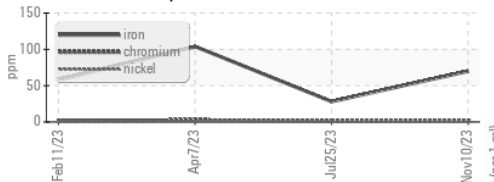
FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs./1mm *ASTM D7414	>25	26.2	16.9	35.0
Base Number (BN)	mg KOH/g ASTM D2896		6.26	10.55	8.60

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

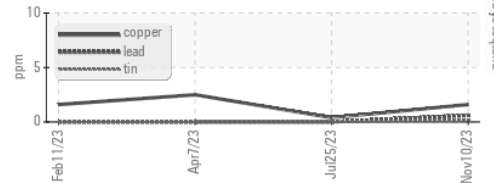
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt ASTM D445		13.1	13.8	13.5

GRAPHS

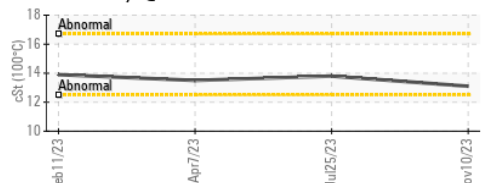
Ferrous Alloys



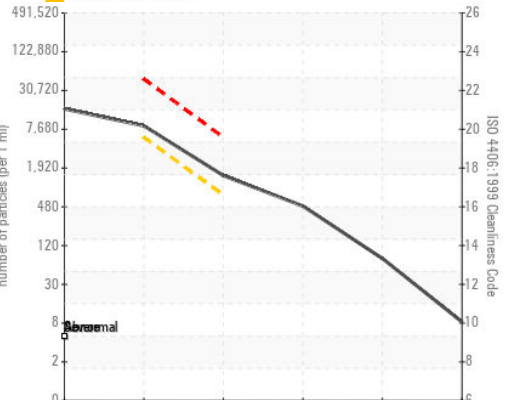
Non-ferrous Metals



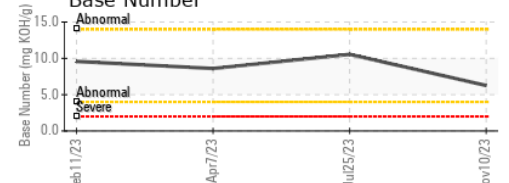
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012077 **Received** : 20 Nov 2023
Lab Number : 06013439 **Diagnosed** : 24 Nov 2023
Unique Number : 10752583 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: Glycol, 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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