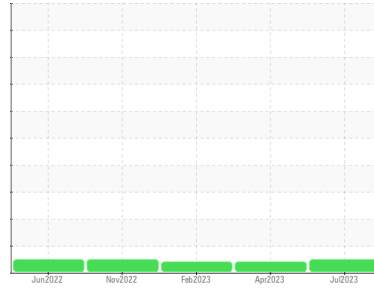




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
35168
 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

The amount and size of particulates present in the system are acceptable. There is no indication of any contamination 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		KL0012066	KLM2339405	KLM2339388
Sample Date	Client Info		27 Jul 2023	08 Apr 2023	11 Feb 2023
Machine Age	mls	Client Info	46406	35465	22214
Oil Age	mls	Client Info	0	0	22214
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	ATTENTION	ATTENTION

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	0.4
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >100	15	29	10
Chromium	ppm	ASTM D5185m >20	<1	1	<1
Nickel	ppm	ASTM D5185m >4	0	<1	<1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	3	10	4
Lead	ppm	ASTM D5185m >40	0	0	<1
Copper	ppm	ASTM D5185m >330	26	32	79
Tin	ppm	ASTM D5185m >15	2	6	5
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	33	81
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	60	65	59
Manganese	ppm	ASTM D5185m	<1	<1	2
Magnesium	ppm	ASTM D5185m	1120	1190	1141
Calcium	ppm	ASTM D5185m	1111	1058	1049
Phosphorus	ppm	ASTM D5185m	1049	1046	1014
Zinc	ppm	ASTM D5185m	1295	1376	1351
Sulfur	ppm	ASTM D5185m	3818	3238	3637

CONTAMINANTS

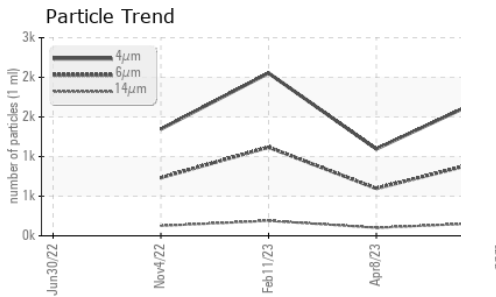
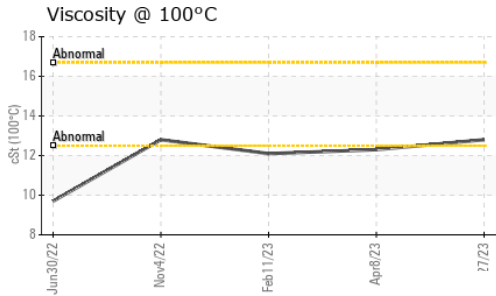
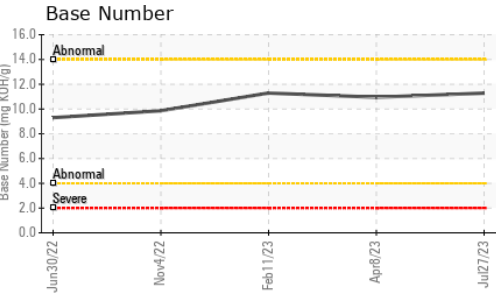
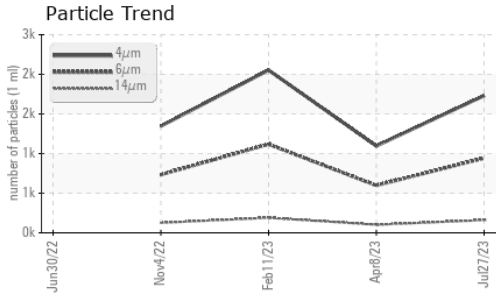
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	4	6	4
Sodium	ppm	ASTM D5185m	2	2	1
Potassium	ppm	ASTM D5185m >20	10	30	13

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	0.4	0.7	0.3
Nitration	Abs/cm	*ASTM D7624 >20	8.3	10.6	7.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	20.4	22.7	20.1



OIL ANALYSIS REPORT



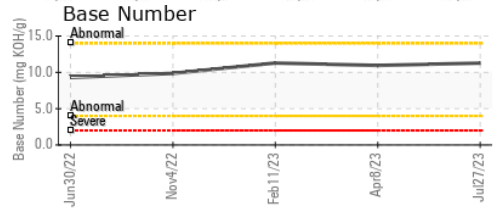
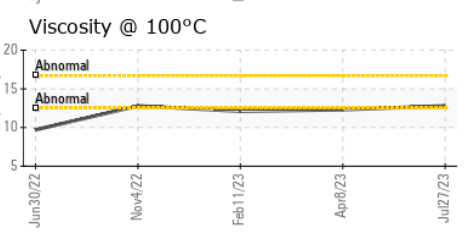
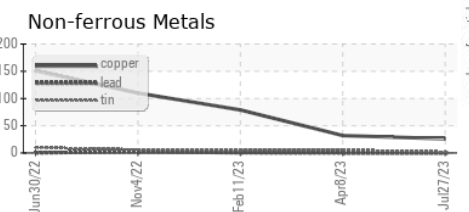
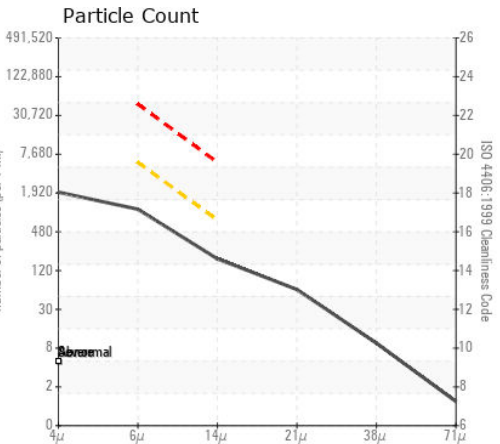
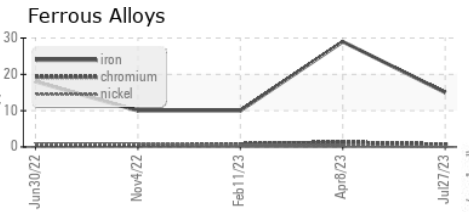
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		1731	1096	2053
Particles >6µm	ASTM D7647	>5000	943	597	1118
Particles >14µm	ASTM D7647	>640	161	102	190
Particles >21µm	ASTM D7647	>160	54	34	64
Particles >38µm	ASTM D7647	>40	8	5	10
Particles >71µm	ASTM D7647	>10	1	1	1
Oil Cleanliness	ISO 4406 (c)	>19/16	17/15	16/14	17/15

FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	*ASTM D7414	>25	16.4	19.3	15.1
Base Number (BN)	mg KOH/g	ASTM D2896		11.28	10.95	11.29

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	12.8	▲ 12.3	▲ 12.1

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012066 **Received** : 14 Aug 2023
Lab Number : **05923594** **Diagnosed** : 18 Aug 2023
Unique Number : 10603541 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: PrtCount)

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 AIEA, HI
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 comija@honolulu.gov
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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)