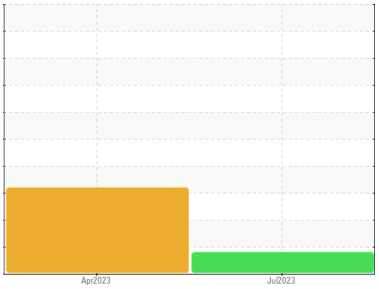
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
27320
Component
Diesel Engine
Fluid
NOT GIVEN (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear
All component wear rates are normal.

Contamination
Light fuel dilution occurring. 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		**KL0012017**	KLM2339302	---
Sample Date		Client Info		**27 Jul 2023**	09 Apr 2023	---
Machine Age	mls	Client Info		**34062**	31382	---
Oil Age	mls	Client Info		**0**	0	---
Oil Changed		Client Info		**N/A**	N/A	---
Sample Status				**MARGINAL**	ATTENTION	---

CONTAMINATION		method	limit/base	current	history1	history2
Glycol		WC Method		**NEG**	NEG	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	**63**	32	---
Chromium	ppm	ASTM D5185m	>20	**2**	1	---
Nickel	ppm	ASTM D5185m	>4	**0**	<1	---
Titanium	ppm	ASTM D5185m		**<1**	<1	---
Silver	ppm	ASTM D5185m	>3	**0**	0	---
Aluminum	ppm	ASTM D5185m	>20	**22**	13	---
Lead	ppm	ASTM D5185m	>40	**0**	0	---
Copper	ppm	ASTM D5185m	>330	**4**	4	---
Tin	ppm	ASTM D5185m	>15	**<1**	<1	---
Vanadium	ppm	ASTM D5185m		**0**	0	---
Cadmium	ppm	ASTM D5185m		**0**	0	---

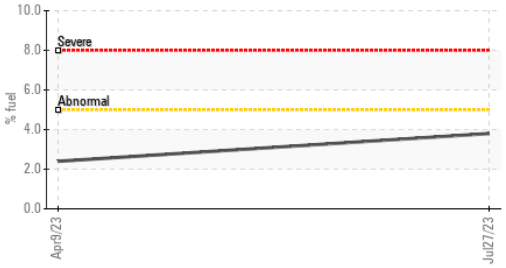
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**24**	43	---
Barium	ppm	ASTM D5185m		**0**	0	---
Molybdenum	ppm	ASTM D5185m		**68**	66	---
Manganese	ppm	ASTM D5185m		**<1**	<1	---
Magnesium	ppm	ASTM D5185m		**1034**	1034	---
Calcium	ppm	ASTM D5185m		**1125**	1082	---
Phosphorus	ppm	ASTM D5185m		**989**	1022	---
Zinc	ppm	ASTM D5185m		**1272**	1280	---
Sulfur	ppm	ASTM D5185m		**3740**	3903	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**9**	8	---
Sodium	ppm	ASTM D5185m		**6**	4	---
Potassium	ppm	ASTM D5185m	>20	**59**	38	---
Fuel	%	ASTM D3524	>5	▲ **3.8**	▲ 2.4	---

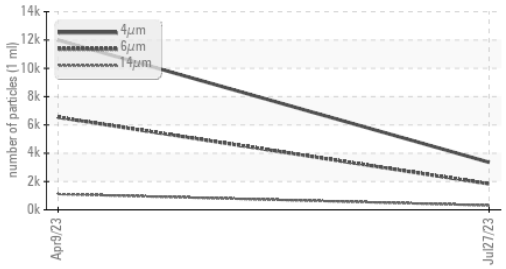
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.1**	0.8	---
Nitration	Abs/cm	*ASTM D7624	>20	**12.2**	10.4	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**28.2**	24.4	---

OIL ANALYSIS REPORT

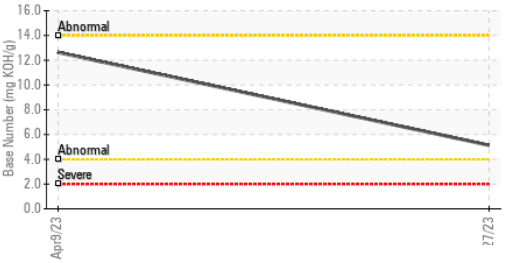
Fuel Dilution



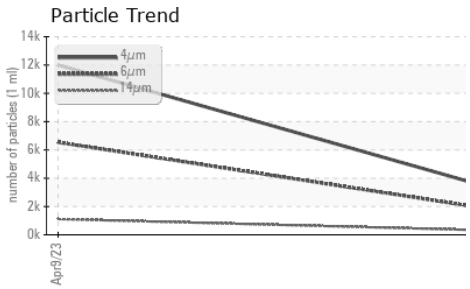
Particle Trend



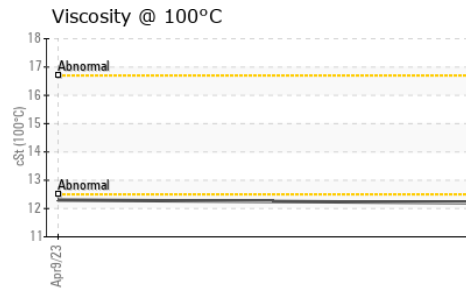
Base Number



Particle Trend



Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**3358**	11997	---
Particles >6µm		ASTM D7647	>5000	**1829**	▲ 6535	---
Particles >14µm		ASTM D7647	>640	**311**	▲ 1112	---
Particles >21µm		ASTM D7647	>160	**105**	▲ 375	---
Particles >38µm		ASTM D7647	>40	**16**	▲ 58	---
Particles >71µm		ASTM D7647	>10	**2**	6	---
Oil Cleanliness		ISO 4406 (c)	>19/16	**18/15**	▲ 20/17	---

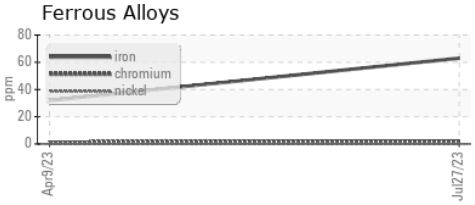
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**29.3**	23.8	---
Base Number (BN)	mg KOH/g	ASTM D2896		**5.13**	12.63	---

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	---
Free Water	scalar	*Visual		**NEG**	NEG	---

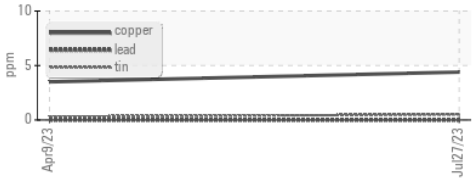
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**12.2**	▲ 12.3	---

GRAPHS

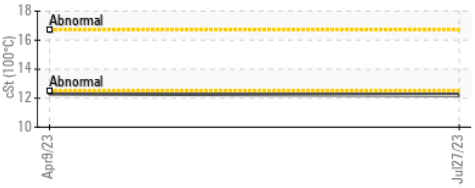
Ferrous Alloys



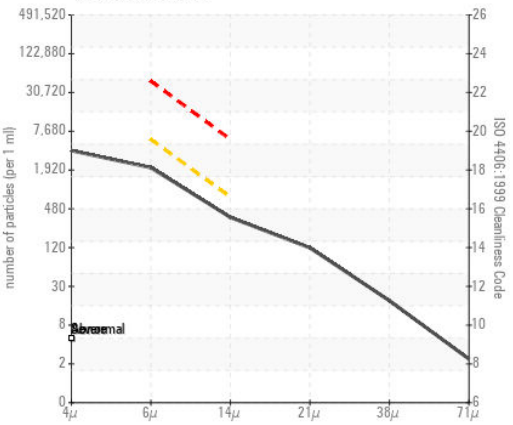
Non-ferrous Metals



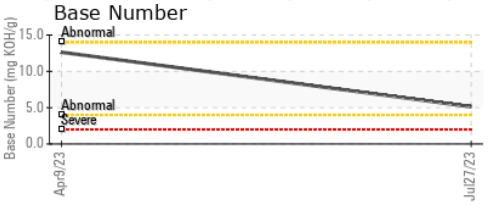
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0012017 **Received** : 14 Aug 2023
Lab Number : 05923576 **Diagnosed** : 16 Aug 2023
Unique Number : 10603523 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel, 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)

CITY & COUNTY HONOLULU
99-999 IWAENA RD
AIEA, HI
US 96701
Contact: CLYDE OMIJA
comija@honolulu.gov
T: (575)623-9952
F: