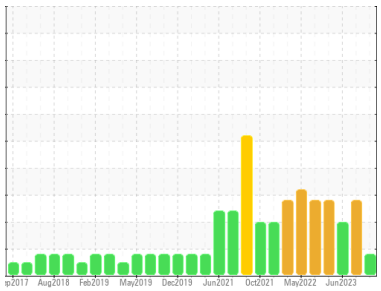
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
MANNS 1100 X6
Component
Port Main Engine
Fluid
{not provided} (23 GAL)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
The copper level is abnormal. All other 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		**KL0013498**	KL0013501	KLM2316481
Sample Date		Client Info		**14 May 2024**	01 May 2024	07 Jun 2023
Machine Age	hrs	Client Info		**2285**	1708	373
Oil Age	hrs	Client Info		**580**	500	373
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	**7**	9	18
Chromium	ppm	ASTM D5185m	>8	**1**	1	1
Nickel	ppm	ASTM D5185m	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185m	>3	**<1**	<1	0
Silver	ppm	ASTM D5185m	>2	**<1**	<1	0
Aluminum	ppm	ASTM D5185m	>15	**2**	2	1
Lead	ppm	ASTM D5185m	>18	**<1**	<1	<1
Copper	ppm	ASTM D5185m	>80	▲ **181**	▲ 165	87
Tin	ppm	ASTM D5185m	>14	**1**	1	<1
Vanadium	ppm	ASTM D5185m		**<1**	<1	0
Cadmium	ppm	ASTM D5185m		**<1**	<1	0

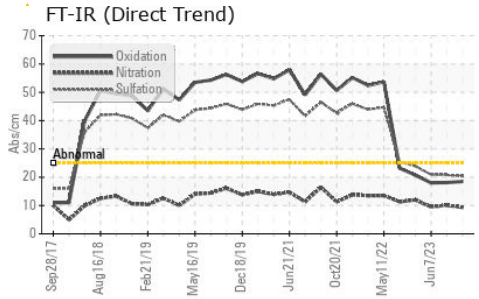
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**21**	19	20
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**68**	61	53
Manganese	ppm	ASTM D5185m		**<1**	<1	1
Magnesium	ppm	ASTM D5185m		**1125**	1039	881
Calcium	ppm	ASTM D5185m		**870**	856	728
Phosphorus	ppm	ASTM D5185m		**1025**	974	827
Zinc	ppm	ASTM D5185m		**1244**	1198	1037
Sulfur	ppm	ASTM D5185m		**3483**	3613	3184

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**4**	4	4
Sodium	ppm	ASTM D5185m	>75	**4**	5	22
Potassium	ppm	ASTM D5185m	>20	**2**	2	4
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

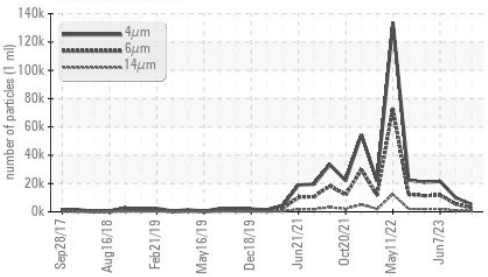
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.2**	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	**9.3**	10.1	9.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	**20.4**	20.8	20.9

OIL ANALYSIS REPORT

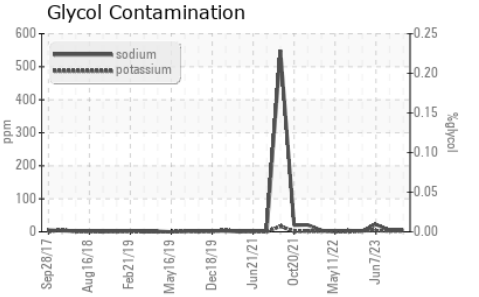
FT-IR (Direct Trend)



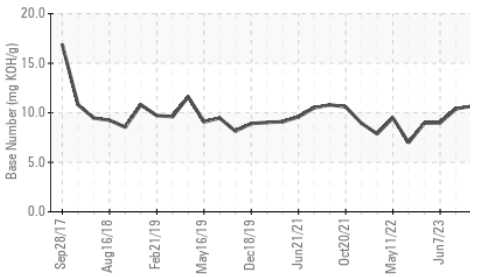
Particle Trend



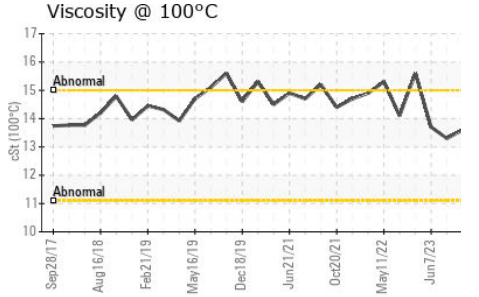
Glycol Contamination



Base Number



Viscosity @ 100°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**5089**	9944	21445
Particles >6µm		ASTM D7647	>5000	**2772**	5417	11682
Particles >14µm		ASTM D7647	>640	**472**	922	1988
Particles >21µm		ASTM D7647	>160	**159**	311	670
Particles >38µm		ASTM D7647	>40	**25**	48	103
Particles >71µm		ASTM D7647	>10	**3**	5	11
Oil Cleanliness		ISO 4406 (c)	>19/16	**19/16**	20/17	21/18

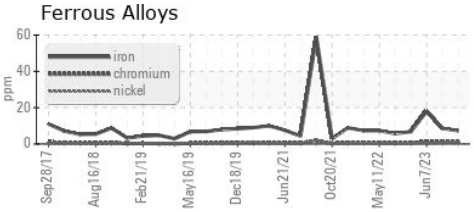
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**18.5**	18.1	18.0
Base Number (BN)	mg KOH/g	ASTM D2896		**10.66**	10.39	8.98

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	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

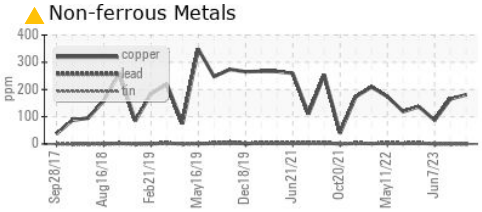
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**13.6**	13.3	13.7

GRAPHS

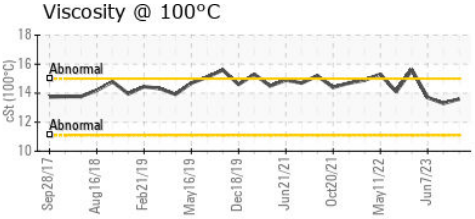
Ferrous Alloys



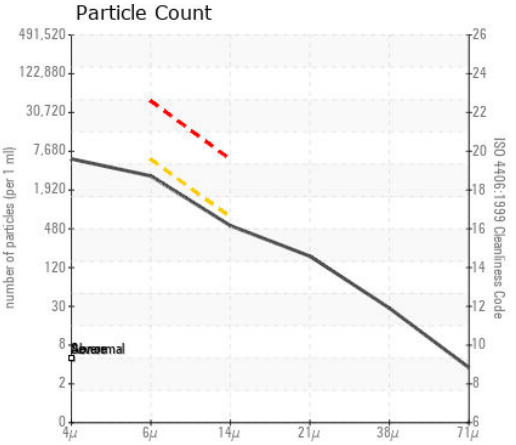
Non-ferrous Metals



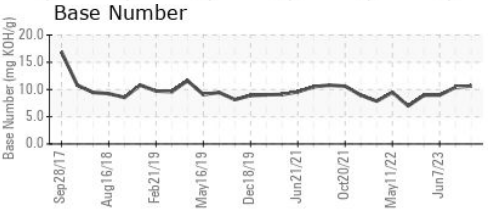
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013498
Lab Number : 06183443
Unique Number : 11034769
Test Package : MOB 2 (Additional Tests: Glycol, PrtCount)

Received : 17 May 2024
Tested : 21 May 2024
Diagnosed : 21 May 2024 - Don Baldridge

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)

EXPEDITIONS
658 FRONT ST, SUITE 127
LAHAINA, HI
US 96761
Contact: BILL CALDWELL
bill@go-lanai.com
T: (800)695-2624
F: (808)661-0544