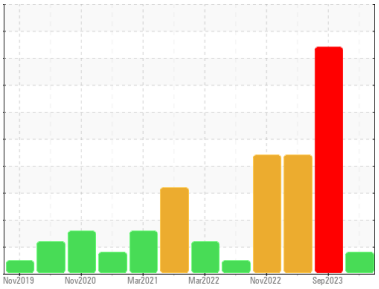
OIL ANALYSIS REPORT

Area
GUAY SON [CONHER]
Machine Id
BM Luis II
Component
Bottom Marine Diesel
Fluid
XTRA REV 15W40 (8 LTR)

Sample Rating Trend



FUEL

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Light fuel dilution occurring. No other contaminants were detected in the oil. 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 acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KL0013337**	KL0012806	KL0011365
Sample Date		Client Info		**25 Oct 2023**	15 Sep 2023	11 Mar 2023
Machine Age	hrs	Client Info		**16067**	15611	15561
Oil Age	hrs	Client Info		**347**	700	1536
Oil Changed		Client Info		**Changed**	Not Changd	Not Changd
Sample Status				**MARGINAL**	SEVERE	ABNORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>80	**82**	▲ 147	▲ 102
Chromium	ppm	ASTM D5185m	>14	**3**	▲ 16	14
Nickel	ppm	ASTM D5185m	>3	**0**	<1	0
Titanium	ppm	ASTM D5185m	>2	**0**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>10	**6**	▲ 12	▲ 11
Lead	ppm	ASTM D5185m	>11	**0**	2	1
Copper	ppm	ASTM D5185m	>25	**2**	3	2
Tin	ppm	ASTM D5185m	>2	**<1**	2	1
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	5	3
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	4	3
Manganese	ppm	ASTM D5185m		**<1**	2	1
Magnesium	ppm	ASTM D5185m		**11**	32	23
Calcium	ppm	ASTM D5185m		**2948**	3490	3369
Phosphorus	ppm	ASTM D5185m		**1028**	1149	1110
Zinc	ppm	ASTM D5185m		**1235**	1401	1364
Sulfur	ppm	ASTM D5185m		**3654**	4648	4486

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**20**	▲ 38	▲ 25
Sodium	ppm	ASTM D5185m	>40	**12**	25	17
Potassium	ppm	ASTM D5185m	>20	**3**	6	3
Fuel	%	ASTM D3524	>5	▲ **3.9**	⬢ 10.4	▲ 6.8

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.3**	0.1	0.7
Nitration	Abs/cm	*ASTM D7624	>20	**11.2**	15.8	14.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**22.6**	25.1	22.1

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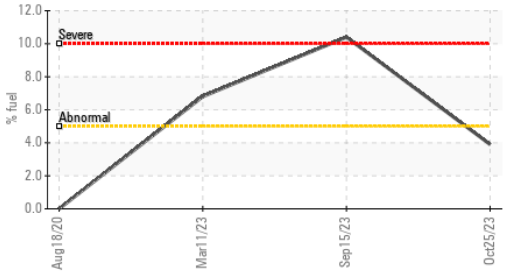
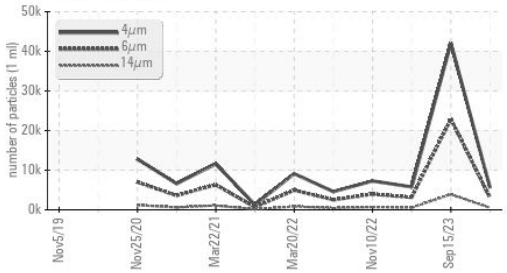
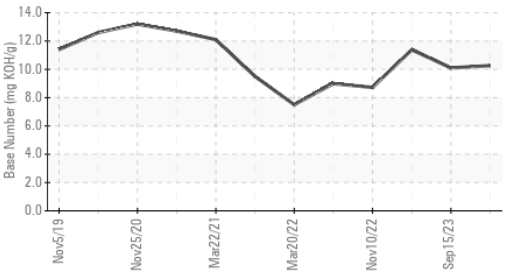
Fuel Dilution



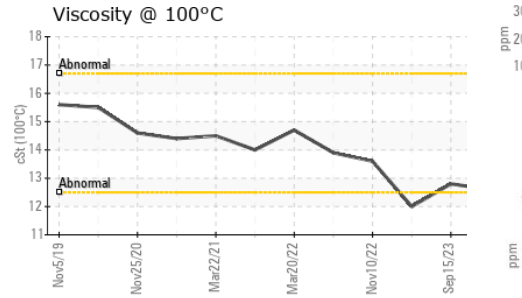
Particle Trend



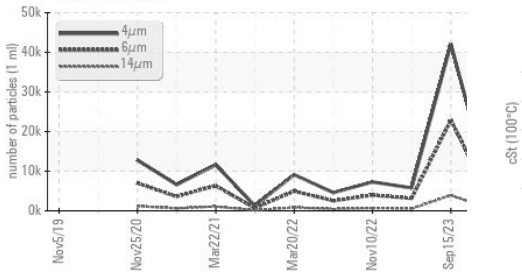
Base Number



Viscosity @ 100°C



Particle Trend



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**5550**	42072	5759
Particles >6µm		ASTM D7647	>5000	**3024**	▲ 22919	3137
Particles >14µm		ASTM D7647	>640	**515**	▲ 3900	534
Particles >21µm		ASTM D7647	>160	**173**	▲ 1314	180
Particles >38µm		ASTM D7647	>40	**27**	▲ 203	28
Particles >71µm		ASTM D7647	>10	**3**	▲ 21	3
Oil Cleanliness		ISO 4406 (c)	>19/16	**19/16**	▲ 22/19	19/16

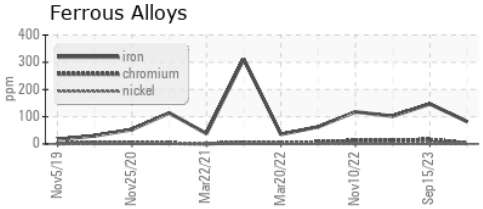
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**20.2**	22.3	21.0
Base Number (BN)	mg KOH/g	ASTM D2896		**10.26**	10.10	11.38

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

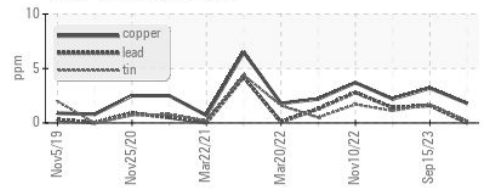
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		**12.6**	12.8	▲ 12.0

GRAPHS

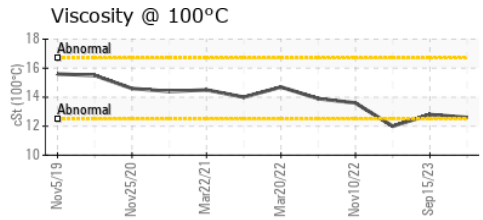
Ferrous Alloys



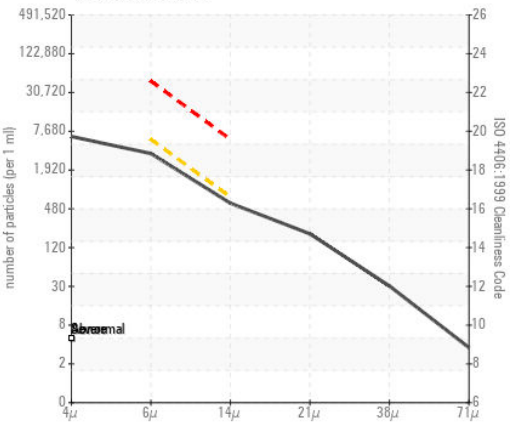
Non-ferrous Metals



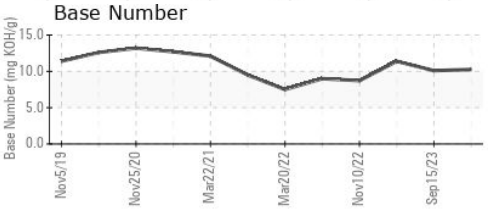
Viscosity @ 100°C



Particle Count



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0013337 **Received** : 01 Nov 2023
Lab Number : 05996370 **Diagnosed** : 03 Nov 2023
Unique Number : 10724730 **Diagnostician** : Don Baldridge
Test Package : MOB 2 (Additional Tests: 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)

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