MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
LES GRIMM
Machine Id
[LES GRIMM] 008 569145-8
Component
Starboard Genset
Fluid
CHEVRON DELO 400 LE 15W40 (7 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

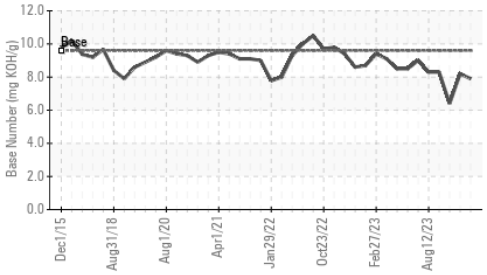
There is no indication of any contamination in the oil.

FLUID CONDITION

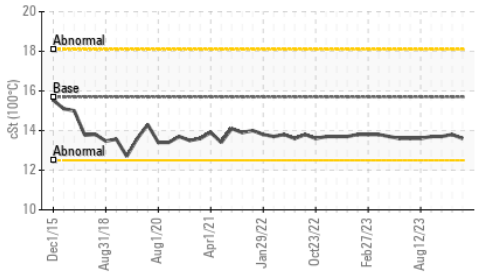
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0051475	MW0059885	MW0058578
Sample Date		Client Info		19 Feb 2024	12 Jan 2024	07 Dec 2023
Machine Age	hrs	Client Info		4224	3116	3434
Oil Age	hrs	Client Info		408	382	533
Filter Age	hrs	Client Info		408	382	533
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	---	NORMAL
Iron	ppm	ASTM D5185m	>50	9	---	12
Chromium	ppm	ASTM D5185m	>4	<1	---	<1
Nickel	ppm	ASTM D5185m	>2	0	---	<1
Titanium	ppm	ASTM D5185m		14	---	16
Silver	ppm	ASTM D5185m	>5	0	---	0
Aluminum	ppm	ASTM D5185m	>12	1	---	1
Lead	ppm	ASTM D5185m	>17	0	---	<1
Copper	ppm	ASTM D5185m	>70	<1	---	<1
Tin	ppm	ASTM D5185m	>15	<1	---	<1
Vanadium	ppm	ASTM D5185m		0	---	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	4	---	4
Potassium	ppm	ASTM D5185m	>20	2	---	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.3	0.3	0.4
Nitration	Abs/cm	*ASTM D7624	>20	9.2	9.0	10.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.9	19.0	21.8
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
Sodium	ppm	ASTM D5185m		2	---	3
Boron	ppm	ASTM D5185m		78	---	87
Barium	ppm	ASTM D5185m		0	---	0
Molybdenum	ppm	ASTM D5185m		29	---	33
Manganese	ppm	ASTM D5185m		<1	---	<1
Magnesium	ppm	ASTM D5185m		682	---	766
Calcium	ppm	ASTM D5185m		1458	---	1671
Phosphorus	ppm	ASTM D5185m	1200	731	---	831
Zinc	ppm	ASTM D5185m	1300	820	---	962
Sulfur	ppm	ASTM D5185m	3200	2938	---	3450
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9	14.4	20.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	7.9	8.2	6.4
Visc @ 100°C	cSt	ASTM D445	15.7	13.6	13.8	13.7

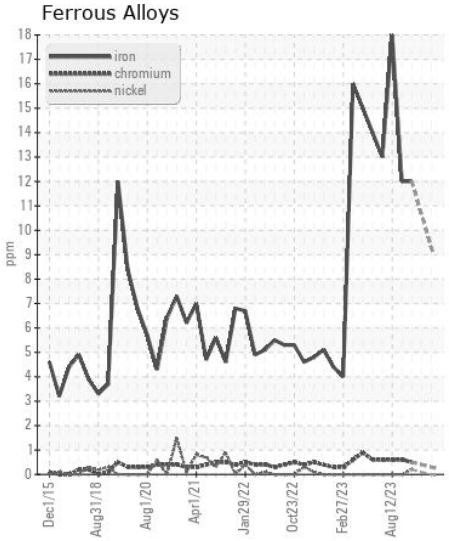
Base Number



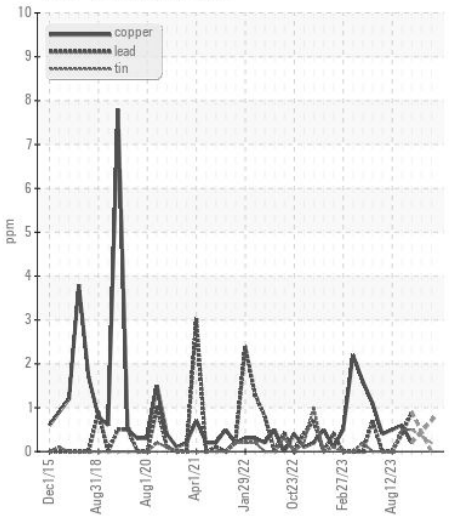
Viscosity @ 100°C



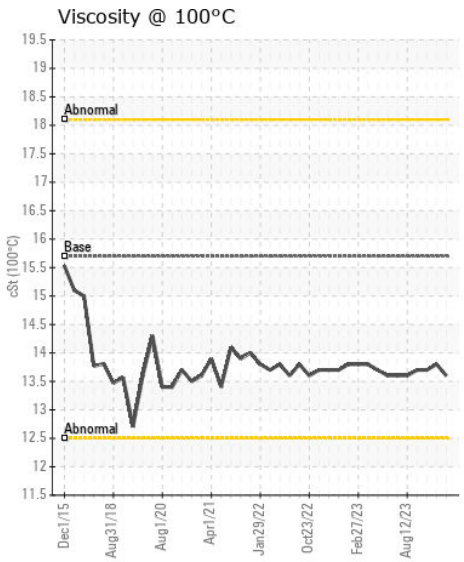
Ferrous Alloys



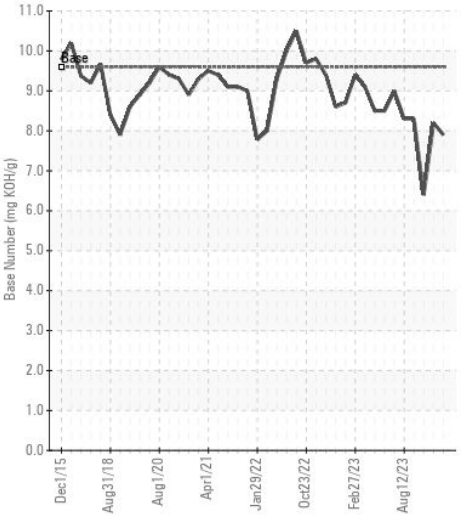
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0051475
Lab Number : 06104985
Unique Number : 10903215
Test Package : MAR 2

Received : 29 Feb 2024
Tested : 01 Mar 2024
Diagnosed : 01 Mar 2024 - Wes Davis

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)

INGRAM BARGE
900 S 3RD ST
PADUCAH, KY
US 42003
Contact: ANTHONY VAN CURA
anthony.vancura@ingrambarge.com
T: (270)415-4467
F: (615)695-3697