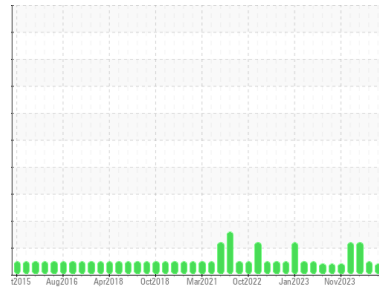




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area

ELEANOR G MCDONALD

Machine ID

[ELEANOR G MCDONALD] 008 552824-8

Component

Starboard Genset

Fluid

CHEVRON DELO 400 XLE 15W40 (--- GAL)

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

There is no indication of any contamination in the oil.

Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		MW0068228	MW0068227	MW0065844
Sample Date	Client Info		27 May 2024	03 May 2024	01 Apr 2024
Machine Age	hrs	Client Info	6391	5986	5596
Oil Age	hrs	Client Info	405	390	404
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ATTENTION	NORMAL	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
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	2	6	10
Chromium	ppm	ASTM D5185m >4	0	<1	<1
Nickel	ppm	ASTM D5185m >2	<1	0	<1
Titanium	ppm	ASTM D5185m	0	<1	<1
Silver	ppm	ASTM D5185m >5	0	0	0
Aluminum	ppm	ASTM D5185m >12	2	4	4
Lead	ppm	ASTM D5185m >17	0	<1	<1
Copper	ppm	ASTM D5185m >70	25	54	79
Tin	ppm	ASTM D5185m >15	0	<1	<1
Vanadium	ppm	ASTM D5185m	0	<1	<1
Cadmium	ppm	ASTM D5185m	2	<1	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	397	398	331
Barium	ppm	ASTM D5185m	0	0	2
Molybdenum	ppm	ASTM D5185m	115	120	118
Manganese	ppm	ASTM D5185m	1	<1	2
Magnesium	ppm	ASTM D5185m	615	618	595
Calcium	ppm	ASTM D5185m	1597	1532	1482
Phosphorus	ppm	ASTM D5185m 760	660	724	625
Zinc	ppm	ASTM D5185m 830	807	846	778
Sulfur	ppm	ASTM D5185m 2770	2604	2623	2366

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	4	6	7
Sodium	ppm	ASTM D5185m	4	2	2
Potassium	ppm	ASTM D5185m >20	3	2	2

INFRA-RED

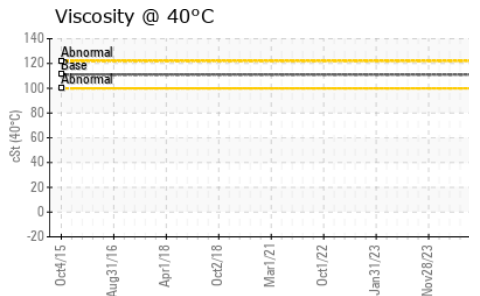
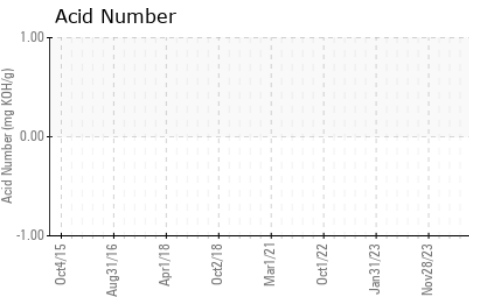
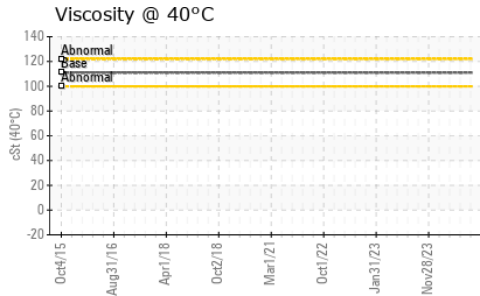
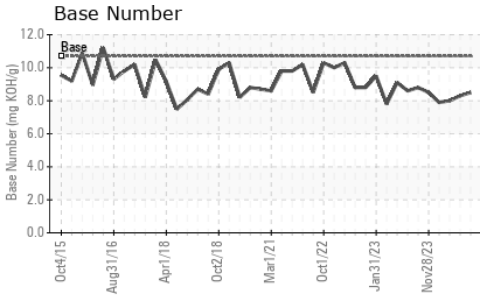
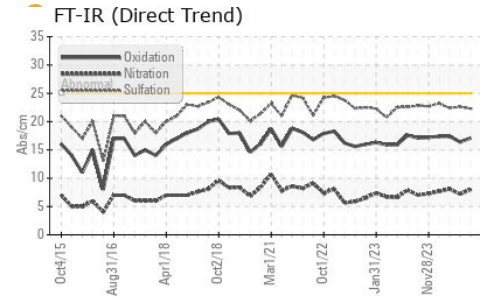
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	8.0	7.2	8.1
Sulfation	Abs/.1mm	*ASTM D7415 >30	22.3	22.6	22.4

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	17.1	16.4	17.4
Base Number (BN)	mg KOH/g	ASTM D2896 10.7	8.5	8.3	8.0



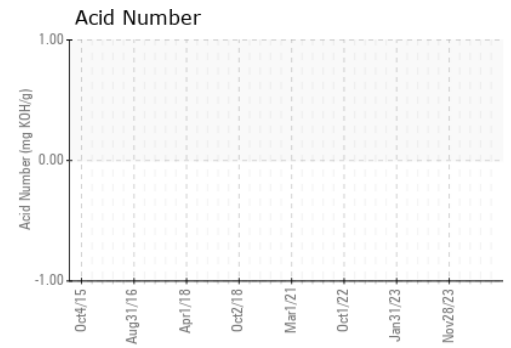
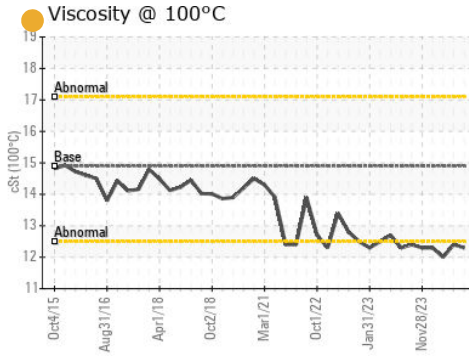
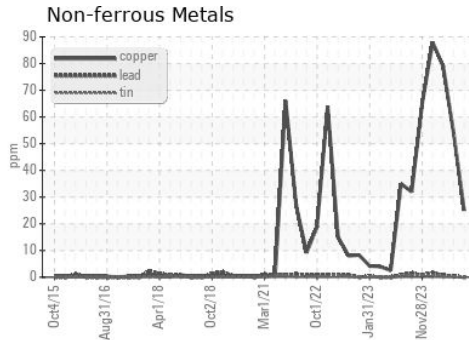
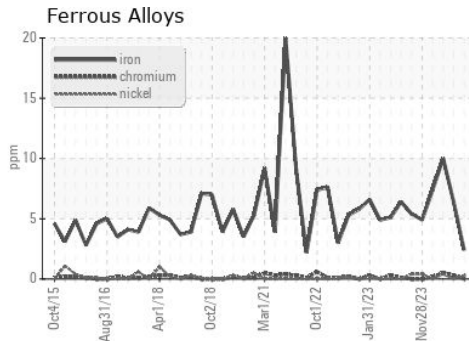
OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.9	12.3	12.4

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : MW0068228
 Lab Number : 06209486
 Unique Number : 11076947
 Test Package : MAR 2 (Additional Tests: KV40, TAN Man)
 Received : 13 Jun 2024
 Tested : 17 Jun 2024
 Diagnosed : 17 Jun 2024 - Don Baldrige

INGRAM BARGE
 900 S 3RD ST
 PADUCAH, KY
 US 42003

Contact: ANTHONY VAN CURA
 anthony.vancura@ingrambarge.com

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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