



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

A.A. BIRCH

Machine Id

[A.A. BIRCH] 008 616455-8

Component

Starboard Genset

Fluid

CHEVRON DELO 400 XLE 15W40 (300 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0053876	MW0060243	MW0060245
Sample Date		Client Info		24 Dec 2023	01 Dec 2023	29 Oct 2023
Machine Age	hrs	Client Info		5468	350	4744
Oil Age	hrs	Client Info		335	350	342
Filter Age	hrs	Client Info		335	350	342
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	8	7	6
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	<1	2
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	3	2	3
Lead	ppm	ASTM D5185m	>17	0	0	<1
Copper	ppm	ASTM D5185m	>70	<1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

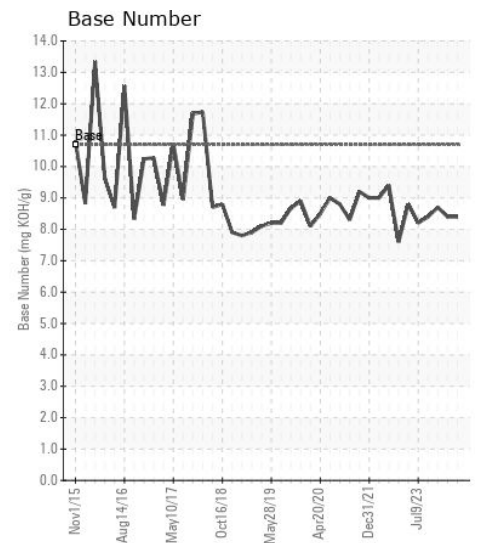
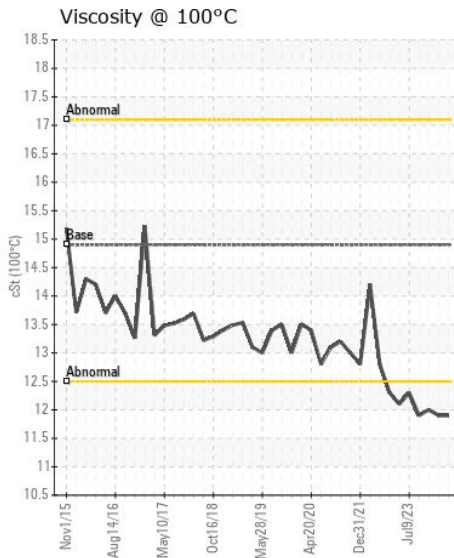
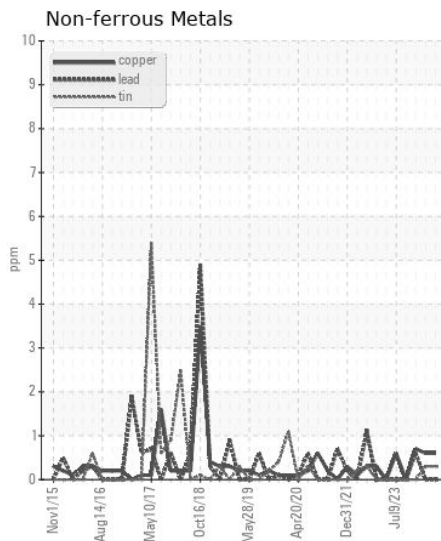
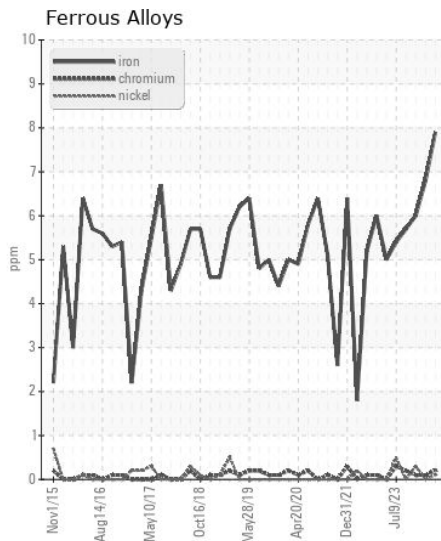
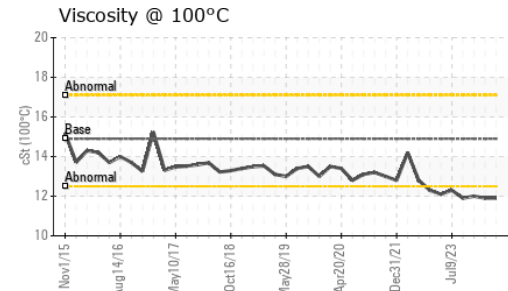
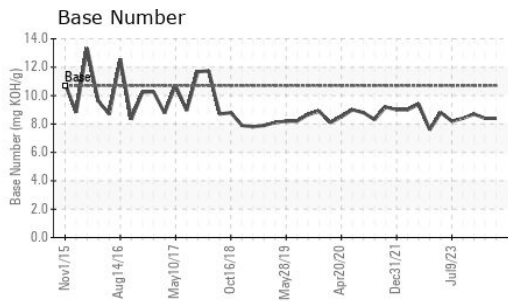
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	8	6	6
Potassium	ppm	ASTM D5185m	>20	2	2	3
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		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.3	7.4	7.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.8	22.6	21.6
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

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.

Sodium	ppm	ASTM D5185m		0	0	0
Boron	ppm	ASTM D5185m		385	328	384
Barium	ppm	ASTM D5185m		0	0	9
Molybdenum	ppm	ASTM D5185m		139	117	104
Manganese	ppm	ASTM D5185m		2	2	<1
Magnesium	ppm	ASTM D5185m		749	615	558
Calcium	ppm	ASTM D5185m		1657	1421	1472
Phosphorus	ppm	ASTM D5185m	760	844	723	719
Zinc	ppm	ASTM D5185m	830	952	797	823
Sulfur	ppm	ASTM D5185m	2770	3338	2562	2917
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.2	17.0	16.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	8.4	8.4	8.7
Visc @ 100°C	cSt	ASTM D445	14.9	11.9	11.9	12.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0053876 **Received** : 11 Jan 2024
Lab Number : 06058647 **Diagnosed** : 15 Jan 2024
Unique Number : 10830029 **Diagnostician** : Jonathan Hester
Test Package : MAR 2

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@ingrambarga.com

T: (270)415-4467
 F: (615)695-3697