



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
TENNESSEE MERCHANT (S/N 85201457)
Component
Starboard Genset
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (7 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0044719	MW0044880	MWM731254
Sample Date		Client Info		05 Jul 2024	14 May 2024	02 Dec 2023
Machine Age	hrs	Client Info		4361	3693	3201
Oil Age	hrs	Client Info		162	350	196
Filter Age	hrs	Client Info		162	350	0
Oil Changed		Client Info		Not Changd	Not Changd	N/A
Filter Changed		Client Info		Not Changd	Not Changd	N/A
Sample Status				NORMAL	SEVERE	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	14	15	7
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		6	11	0
Silver	ppm	ASTM D5185m	>5	0	<1	0
Aluminum	ppm	ASTM D5185m	>12	3	2	2
Lead	ppm	ASTM D5185m	>17	0	<1	0
Copper	ppm	ASTM D5185m	>70	<1	1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

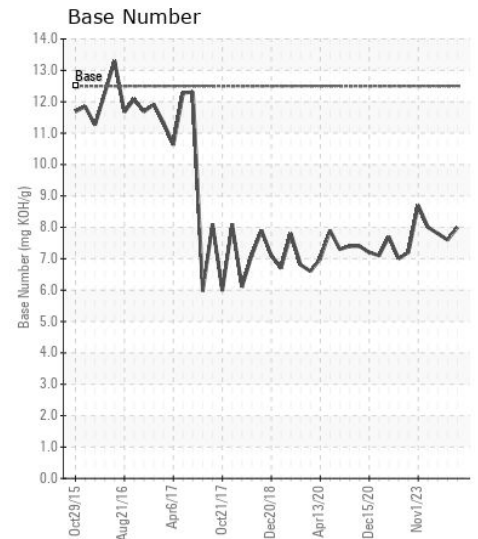
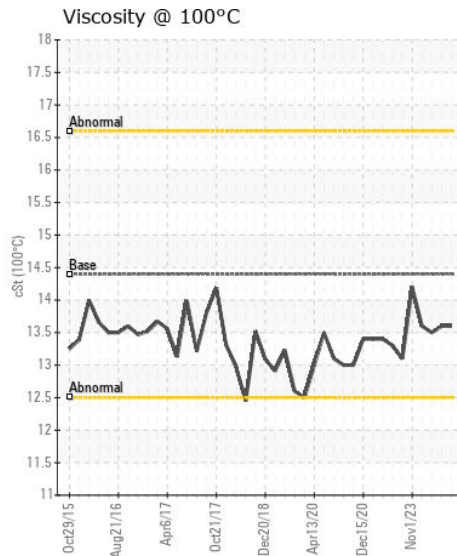
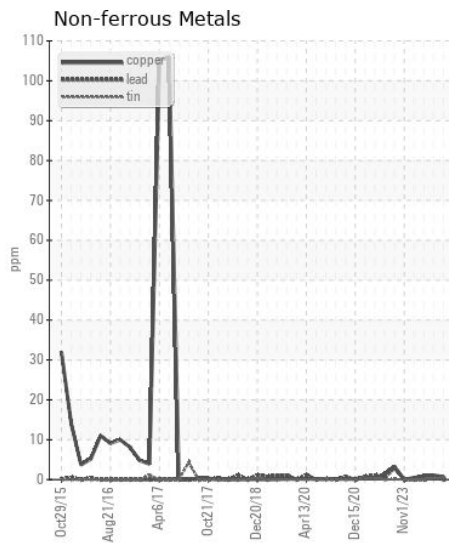
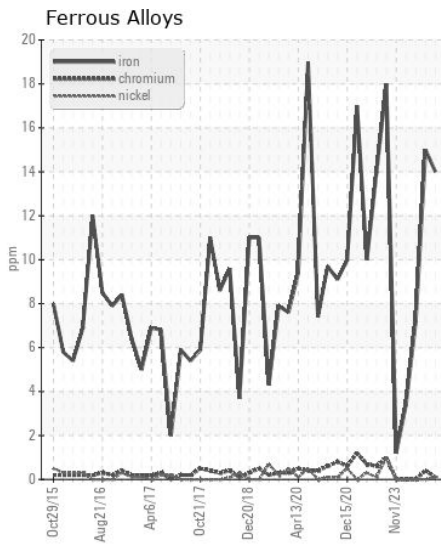
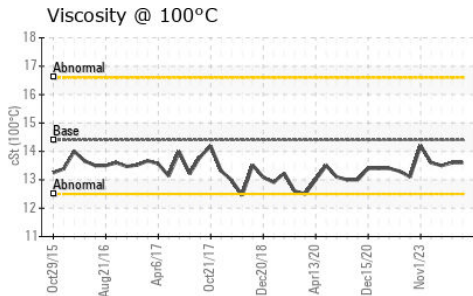
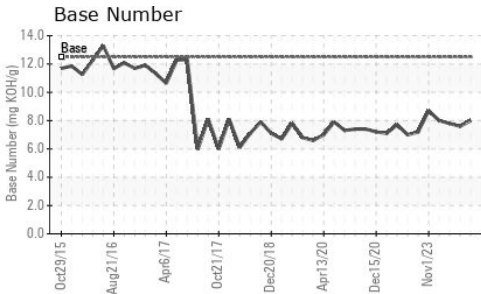
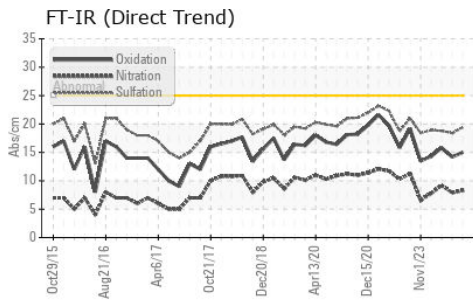
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	14	▲ 88	5
Potassium	ppm	ASTM D5185m	>20	3	4	<1
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		0.2	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	8.3	7.9	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	18.4	18.8
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

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		2	2	27
Boron	ppm	ASTM D5185m	151	181	83	1
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	52	52	57
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m	0	577	679	912
Calcium	ppm	ASTM D5185m	2046	1399	1397	1070
Phosphorus	ppm	ASTM D5185m	1043	857	808	1025
Zinc	ppm	ASTM D5185m	943	1008	822	1226
Sulfur	ppm	ASTM D5185m	5012	3774	3334	2978
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	14.2	15.8
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	8.0	7.6	7.8
Visc @ 100°C	cSt	ASTM D445	14.4	13.6	13.6	13.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0044719
Lab Number : 06234435
Unique Number : 11123269
Test Package : MAR 2

Received : 12 Jul 2024
Tested : 12 Jul 2024
Diagnosed : 12 Jul 2024 - Wes Davis

AMERICAN COMMERCIAL LINES
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 JEFFERSONVILLE, IN
 US 47130
 Contact: RONALD SCHNEIDER
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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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