MAR I WEAR CHECK

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FRC MAIN ENGINE STBD
Component
Starboard Main Engine
Fluid
SAE 5W30 (9 LTR)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

WEAR

All component wear rates are normal.

CONTAMINATION

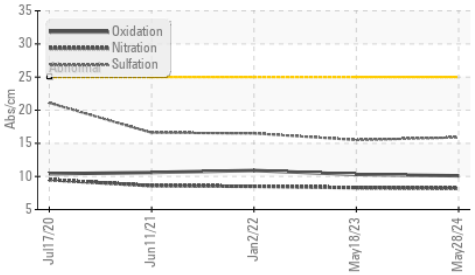
There is no indication of any contamination in the oil.

FLUID CONDITION

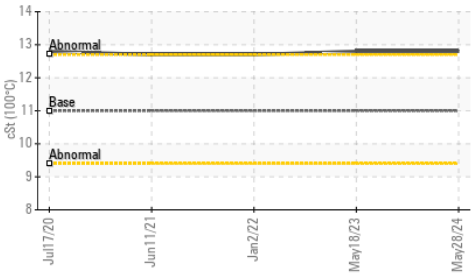
Viscosity of sample indicates oil is within SAE 40 range, advise investigate. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0926689	WC0803054	WC0596899
Sample Date		Client Info		28 May 2024	18 May 2023	02 Jan 2022
Machine Age	hrs	Client Info		28	24	21
Oil Age	hrs	Client Info		0	24	21
Filter Age	hrs	Client Info		0	24	21
Oil Changed		Client Info		N/A	Not Changd	Not Changd
Filter Changed		Client Info		N/A	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185(m)	>75	11	11	12
Chromium	ppm	ASTM D5185(m)	>8	1	1	2
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>3	0	<1	0
Silver	ppm	ASTM D5185(m)	>2	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>15	6	6	7
Lead	ppm	ASTM D5185(m)	>18	0	<1	<1
Copper	ppm	ASTM D5185(m)	>80	5	4	4
Tin	ppm	ASTM D5185(m)	>14	0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>20	4	6	6
Potassium	ppm	ASTM D5185(m)	>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	0	0
Nitration	Abs/cm	ASTM D7624*	>20	8.2	8.3	8.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	15.9	15.5	16.5
Silt	scalar	Visual*	NONE	VLITE	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 D5185(m)	>75	4	4	4
Boron	ppm	ASTM D5185(m)		174	180	188
Barium	ppm	ASTM D5185(m)		<1	<1	<1
Molybdenum	ppm	ASTM D5185(m)		13	7	10
Manganese	ppm	ASTM D5185(m)		<1	1	1
Magnesium	ppm	ASTM D5185(m)		19	20	21
Calcium	ppm	ASTM D5185(m)		3294	3527	3384
Phosphorus	ppm	ASTM D5185(m)		819	884	875
Zinc	ppm	ASTM D5185(m)		902	930	950
Sulfur	ppm	ASTM D5185(m)		1993	2105	2110
Oxidation	Abs/.1mm	ASTM D7414*	>25	10.1	10.3	10.9
Visc @ 100°C	cSt	ASTM D7279(m)	11.0	12.8	12.8	12.7

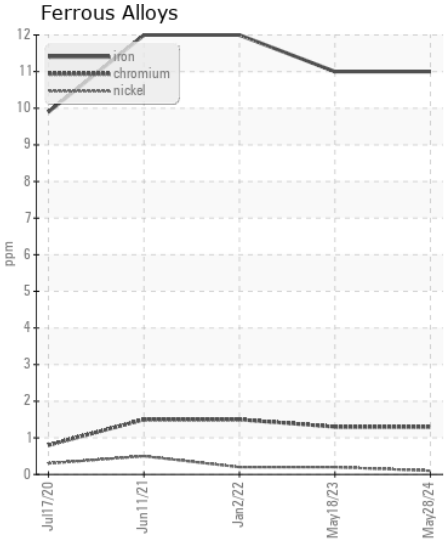
FT-IR (Direct Trend)



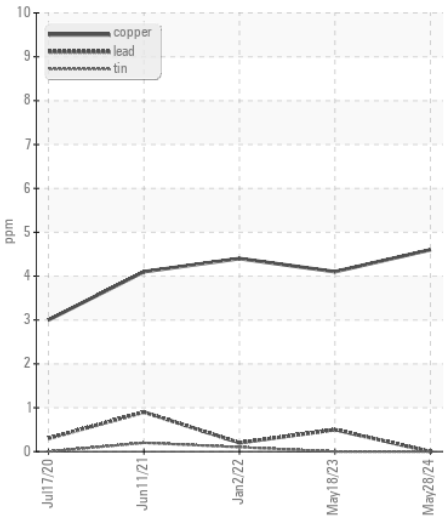
Viscosity @ 100°C



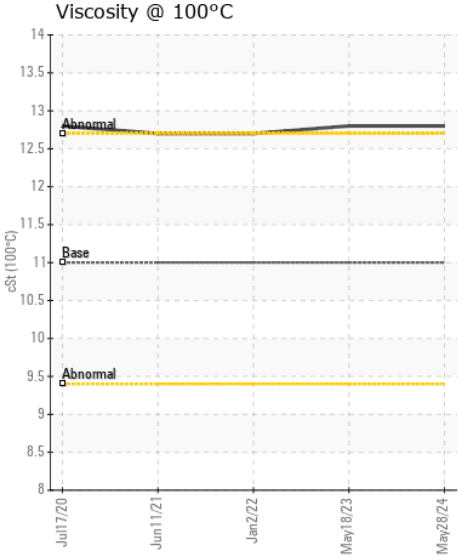
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0926689
Lab Number : 02637816
Unique Number : 5786978
Test Package : MAR 1

Received : 28 May 2024
Tested : 28 May 2024
Diagnosed : 28 May 2024 - Kevin Marson

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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