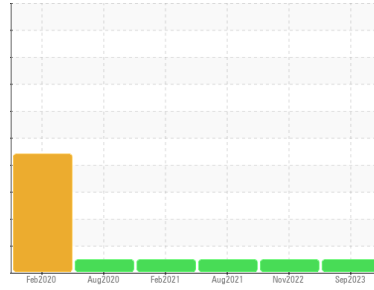




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
STBD MAIN ENGINE
 Component
Starboard Gearbox
 Fluid
SHELL ROTELLA T4 15W40 (31 LTR)

DIAGNOSIS

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

Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0732105	WC0732096	WC0493431
Sample Date	Client Info			18 Sep 2023	29 Nov 2022	14 Aug 2021
Machine Age	hrs	Client Info		1313	1110	716
Oil Age	hrs	Client Info		180	248	209
Oil Changed	Client Info			Not Changed	Not Changed	Not Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m)	>150	5	6	7
Chromium	ppm	ASTM D5185(m)	>10	0	0	0
Nickel	ppm	ASTM D5185(m)	>10	0	<1	<1
Titanium	ppm	ASTM D5185(m)		0	<1	0
Silver	ppm	ASTM D5185(m)		<1	0	<1
Aluminum	ppm	ASTM D5185(m)	>5	3	4	6
Lead	ppm	ASTM D5185(m)	>65	2	4	6
Copper	ppm	ASTM D5185(m)	>80	24	44	69
Tin	ppm	ASTM D5185(m)	>8	1	2	4
Antimony	ppm	ASTM D5185(m)	>5	0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

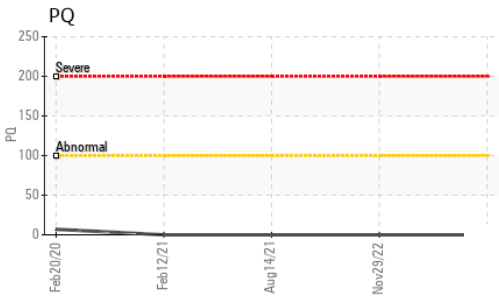
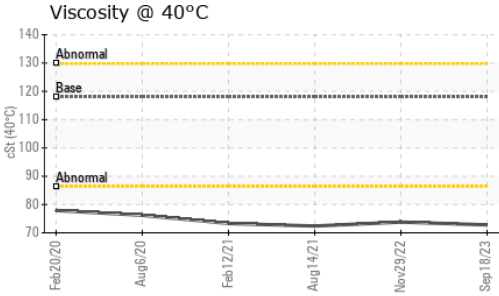
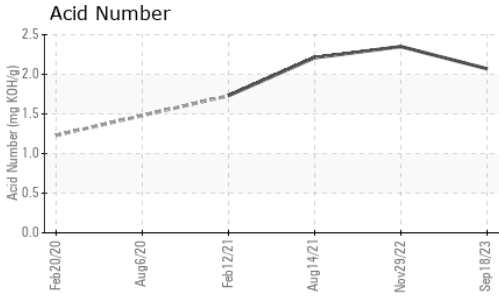
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		201	185	207
Barium	ppm	ASTM D5185(m)		<1	0	0
Molybdenum	ppm	ASTM D5185(m)		<1	2	8
Manganese	ppm	ASTM D5185(m)		0	<1	<1
Magnesium	ppm	ASTM D5185(m)		16	21	52
Calcium	ppm	ASTM D5185(m)		2241	2133	2081
Phosphorus	ppm	ASTM D5185(m)		1043	1043	1059
Zinc	ppm	ASTM D5185(m)		1158	1091	1095
Sulfur	ppm	ASTM D5185(m)		3280	3257	3401
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	3	3	3
Sodium	ppm	ASTM D5185(m)		3	3	2
Potassium	ppm	ASTM D5185(m)	>20	6	6	6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		2.07	2.35	2.21



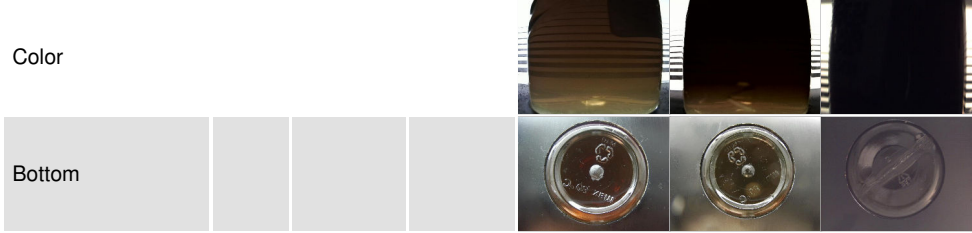
OIL ANALYSIS REPORT



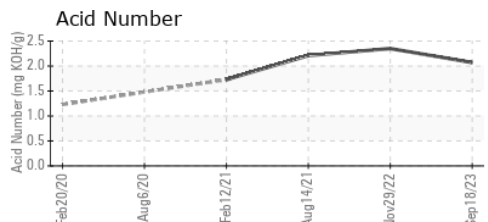
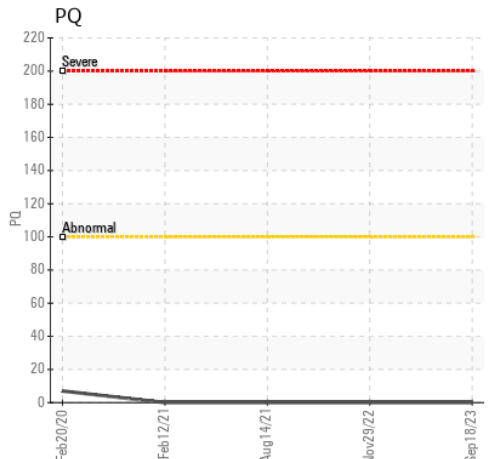
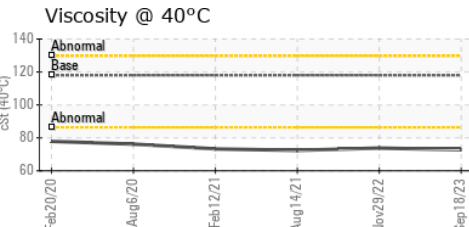
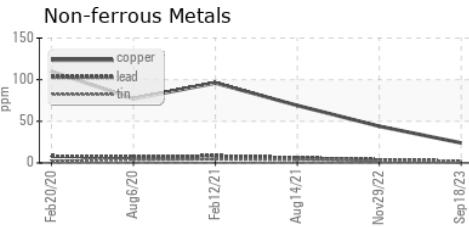
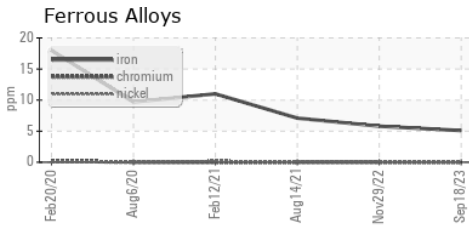
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	118	72.8	73.8

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0732105 **Received** : 05 Oct 2023
Lab Number : 02587328 **Diagnosed** : 06 Oct 2023
Unique Number : 5656394 **Diagnostician** : Kevin Marson
Test Package : MAR 2 (Additional Tests: TAN Man)

CANADIAN COAST GUARD
 CCGS CONCEPTION BAY, 280 SOUTHSIDE RD, BOX 5667
 ST. JOHN'S, NL
 CA A1C 5X1
 Contact: Chief Engineer
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 F:

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.