



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**STBD STERNTUBE**  
 Component  
**Starboard Sterntube**  
 Fluid  
**CASTROL ALPHA SP100 (800 LTR)**

## RECOMMENDATION

Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 2 test kits, this testkit includes AN to determine the suitability of the oil for continued use. this testkit includes Particle Count to determine the ISO cleanliness of the fluid.

## WEAR

All component wear rates are normal.

## CONTAMINATION

There is no indication of any contamination in the component(unconfirmed).

## FLUID CONDITION

The condition of the oil is acceptable for the time in service (unconfirmed).

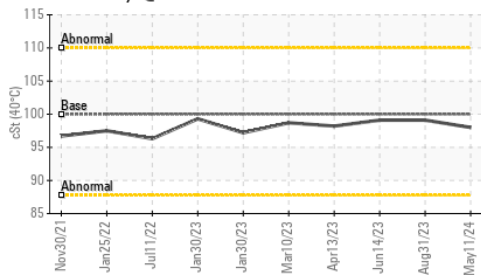
Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0787232</b>	WC0787210	WC0787177
Sample Date		Client Info		<b>11 May 2024</b>	31 Aug 2023	14 Jun 2023
Machine Age	hrs	Client Info		<b>46925</b>	46716	45730
Oil Age	hrs	Client Info		<b>0</b>	0	2261
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	N/A	N/A
Filter Changed		Client Info		<b>None</b>	N/A	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

PQ		ASTM D8184*		<b>0</b>	0	---
Iron	ppm	ASTM D5185(m)	>15	<b>15</b>	15	8
Chromium	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185(m)	>8	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185(m)	>4	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185(m)	>15	<b>7</b>	7	5
Copper	ppm	ASTM D5185(m)	>25	<b>3</b>	3	1
Tin	ppm	ASTM D5185(m)	>10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE

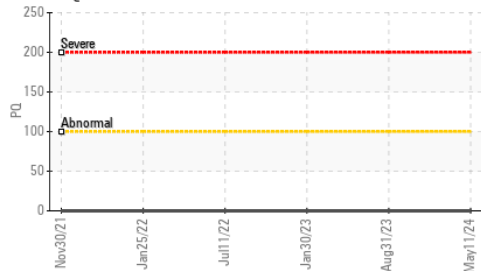
Silicon	ppm	ASTM D5185(m)	>25	<b>2</b>	2	1
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Silt	scalar	Visual*	NONE	<b>VLITE</b>	LIGHT	NONE
Debris	scalar	Visual*	NONE	<b>VLITE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	<b>NEG</b>	NEG	NEG

Sodium	ppm	ASTM D5185(m)		<b>2</b>	3	2
Boron	ppm	ASTM D5185(m)		<b>7</b>	11	14
Barium	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Molybdenum	ppm	ASTM D5185(m)		<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185(m)		<b>1</b>	1	<1
Calcium	ppm	ASTM D5185(m)		<b>6</b>	7	5
Phosphorus	ppm	ASTM D5185(m)		<b>227</b>	230	222
Zinc	ppm	ASTM D5185(m)		<b>6</b>	6	5
Sulfur	ppm	ASTM D5185(m)		<b>8170</b>	8463	8460
Visc @ 40°C	cSt	ASTM D7279(m)	100	<b>98.0</b>	99.1	99.1

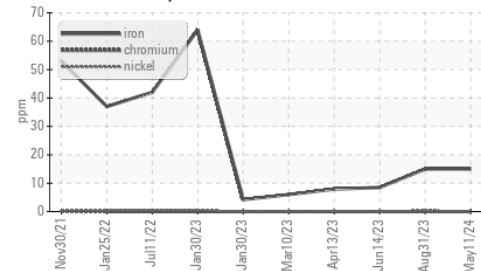
Viscosity @ 40°C



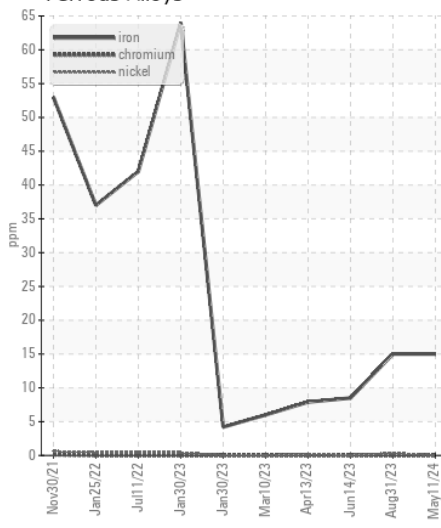
PQ



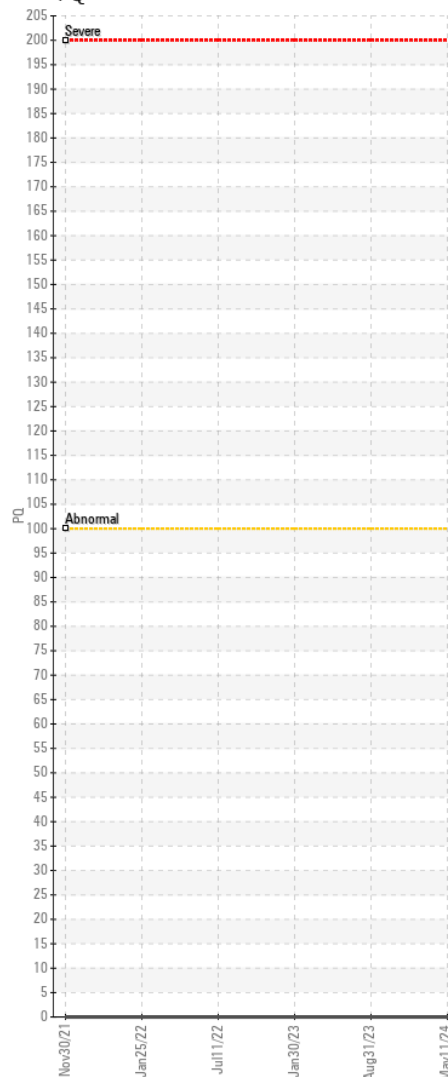
Ferrous Alloys



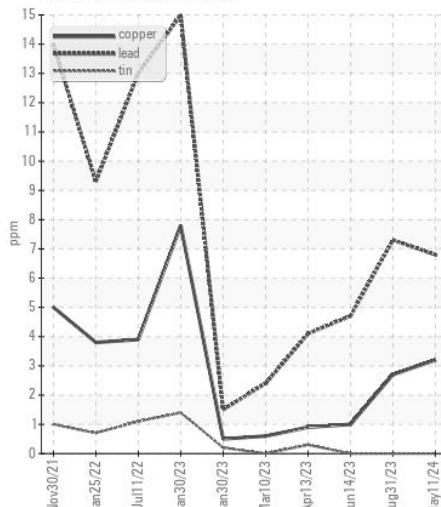
Ferrous Alloys



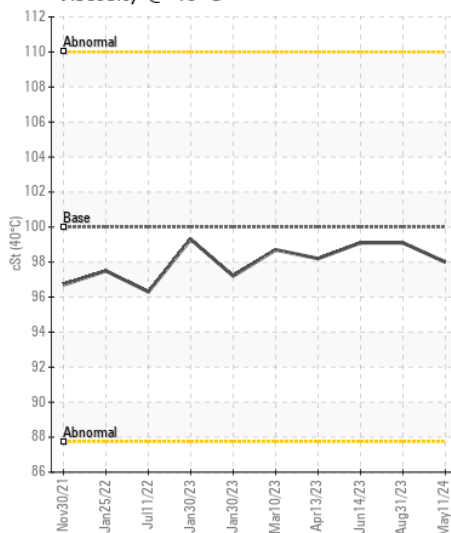
PQ



Non-ferrous Metals



Viscosity @ 40°C



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0787232  
**Lab Number** : 02638476  
**Unique Number** : 5787638  
**Test Package** : MAR 1 ( Additional Tests: PQ )  
**Received** : 29 May 2024  
**Tested** : 30 May 2024  
**Diagnosed** : 31 May 2024 - Kevin Marson

**Horizon Maritime Services Ltd. - K.J. Gardner**  
 101 Research Drive, Main Floor  
 Dartmouth, NS  
 CA B2Y 4T6  
 Contact: Chief engineer  
 cheng.kjgardner@kotugcanada.ca  
 T: (250)208-7255  
 F: