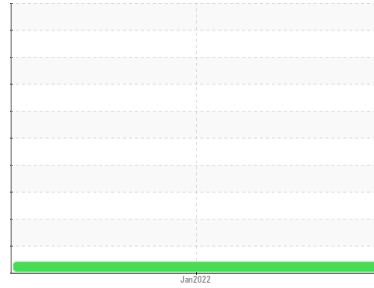




PROBLEM SUMMARY

Sample Rating Trend



VISCOSITY



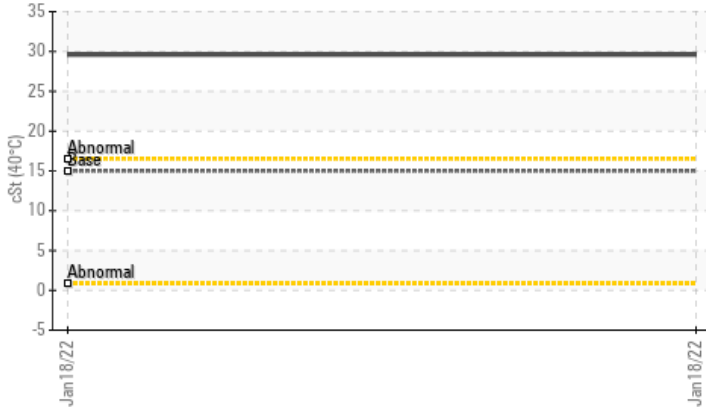
Machine Id
MIDSHIP SERVO

Component
Hydraulic System

Fluid
CASTROL HYSPIN AWS HYDRAULIC 15 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Viscosity @ 40°C



RECOMMENDATION

Resample at the next service interval to monitor.
NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample. 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 Particle Count to determine the ISO cleanliness of the fluid. this testkit includes AN to determine the suitability of the oil for continued use.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	15	▲ 29.6	---	---

Customer Id: HORIZONARC
Sample No.: WC0610268
Lab Number: 02471471
Test Package: MAR 1



To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

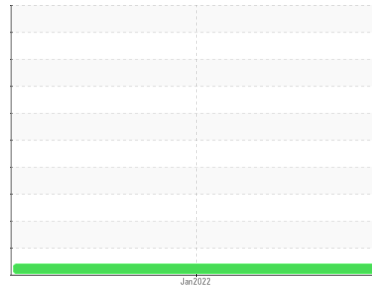
Action	Status	Date	Done By	Description
Contact Required	---	---	?	Please contact your representative for information regarding the proper sampling kits for your service.
Alert	---	---	?	NOTE: We recommend using MAR 2 test kits,
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample.

HISTORICAL DIAGNOSIS



OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Machine Id
MIDSHIP SERVO

Component
Hydraulic System

Fluid
CASTROL HYPIN AWS HYDRAULIC 15 (--- GAL)

DIAGNOSIS

▲ Recommendation

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the component make and model with your next sample. 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 Particle Count to determine the ISO cleanliness of the fluid. this testkit includes AN to determine the suitability of the oil for continued use.

Wear

All component wear rates are normal.

Contamination

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

▲ Fluid Condition

Viscosity of sample indicates oil is within ISO 32 range, advise investigate. The condition of the oil is acceptable for the time in service (unconfirmed).

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0610268	---	---
Sample Date	Client Info		18 Jan 2022	---	---
Machine Age	hrs	Client Info	0	---	---
Oil Age	hrs	Client Info	0	---	---
Oil Changed	Client Info		N/A	---	---
Sample Status			ABNORMAL	---	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >20	<1	---	---
Chromium	ppm	ASTM D5185(m) >10	0	---	---
Nickel	ppm	ASTM D5185(m)	<1	---	---
Titanium	ppm	ASTM D5185(m)	0	---	---
Silver	ppm	ASTM D5185(m)	0	---	---
Aluminum	ppm	ASTM D5185(m) >10	0	---	---
Lead	ppm	ASTM D5185(m) >10	<1	---	---
Copper	ppm	ASTM D5185(m) >75	2	---	---
Tin	ppm	ASTM D5185(m) >10	0	---	---
Antimony	ppm	ASTM D5185(m)	<1	---	---
Vanadium	ppm	ASTM D5185(m)	0	---	---
Beryllium	ppm	ASTM D5185(m)	0	---	---
Cadmium	ppm	ASTM D5185(m)	0	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<1	---	---
Barium	ppm	ASTM D5185(m)	0	---	---
Molybdenum	ppm	ASTM D5185(m)	0	---	---
Manganese	ppm	ASTM D5185(m)	0	---	---
Magnesium	ppm	ASTM D5185(m)	<1	---	---
Calcium	ppm	ASTM D5185(m)	67	---	---
Phosphorus	ppm	ASTM D5185(m)	399	---	---
Zinc	ppm	ASTM D5185(m)	482	---	---
Sulfur	ppm	ASTM D5185(m)	3585	---	---
Lithium	ppm	ASTM D5185(m)	<1	---	---

CONTAMINANTS

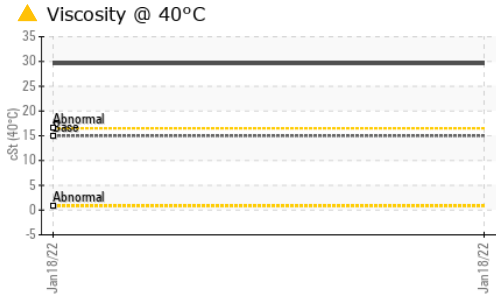
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >20	<1	---	---
Sodium	ppm	ASTM D5185(m)	<1	---	---
Potassium	ppm	ASTM D5185(m) >20	<1	---	---

VISUAL

	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	---
Precipitate	scalar	Visual*	NONE	NONE	---
Silt	scalar	Visual*	NONE	NONE	---
Debris	scalar	Visual*	NONE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.1	NEG	---
Free Water	scalar	Visual*		NEG	---



OIL ANALYSIS REPORT

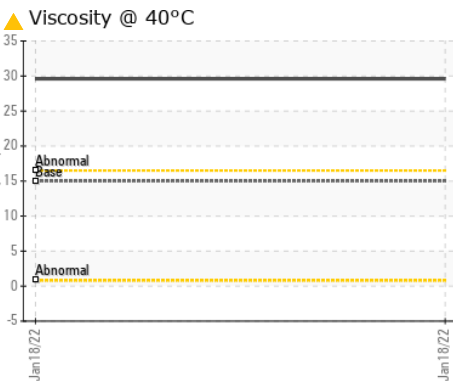
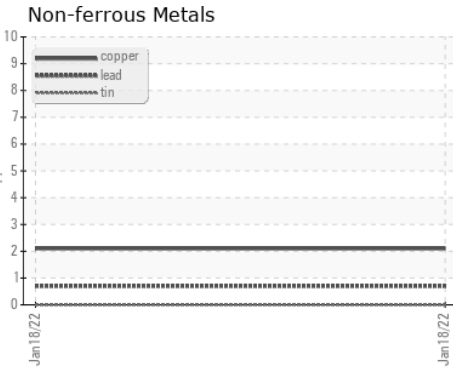
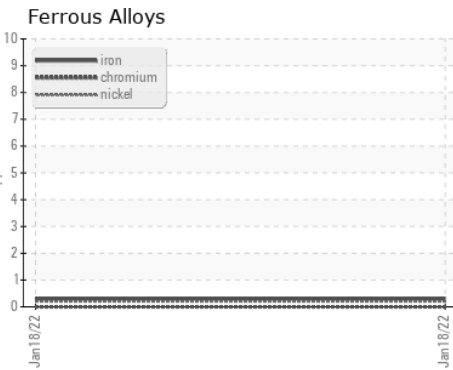


FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	29.6	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color				no image	no image
Bottom				no image	no image

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Horizon Maritime Services Ltd. - Horizon Arctic
Sample No. : WC0610268 **Received** : 10 Feb 2022 87 WATER STREET., 2ND FLOOR
Lab Number : 02471471 **Diagnosed** : 11 Feb 2022 ST.JOHN'S, NL
Unique Number : 5356394 **Diagnostician** : Kevin Marson CA A1C 1A5
Test Package : MAR 1

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.

Contact: Horizon Arctic Chief Engineer
 chiefeng.arctic@horizonvessel.com
 T: (709)702-4447
 F: