

# WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

#### Machine Id **MWP** Component **Starboard Reduction Gear** Fluid **{not provided} (--- GAL)**

RECOMMENDATION

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. 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 brand, type, and viscosity of the oil on your next sample.

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#### WEAR

All component wear rates are normal.

## CONTAMINATION

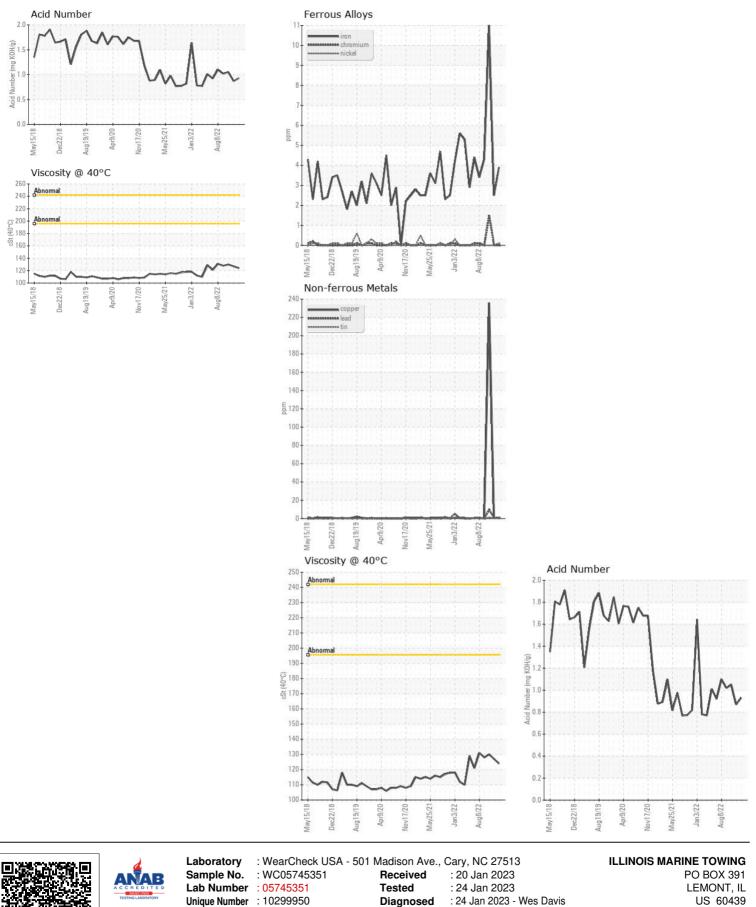
There is no indication of any contamination in the oil.

### **FLUID CONDITION**

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

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Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC05745351	MW05718510	MW05675165
Sample Date		Client Info		22 Jan 2023	14 Dec 2022	24 Oct 2022
Machine Age	hrs	Client Info		36083	35464	34585
Oil Age	hrs	Client Info		619	1679	787
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	SEVERE
Iron	ppm	ASTM D5185m	>150	4	2	11
Chromium	ppm	ASTM D5185m	>10	0	0	2
Nickel	ppm	ASTM D5185m	>10	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>25	<1	1	5
Lead	ppm	ASTM D5185m	>100	<1	<1	10
Copper	ppm	ASTM D5185m	>50	<1	<1	<b>2</b> 36
Tin	ppm	ASTM D5185m	>10	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>50	5	4	11
Silicon Potassium	ppm ppm	ASTM D5185m ASTM D5185m	>50 >20	5 1	4	11 2
				-		
Potassium		ASTM D5185m	>20	1	0	2
Potassium Water	ppm	ASTM D5185m WC Method	>20 >0.1	1 NEG	0 NEG	2 NEG
Potassium Water Silt	ppm scalar	ASTM D5185m WC Method *Visual	>20 >0.1 NONE	1 NEG NONE	0 NEG NONE	2 NEG NONE
Potassium Water Silt Debris	ppm scalar scalar	ASTM D5185m WC Method *Visual *Visual	>20 >0.1 NONE NONE	1 NEG NONE NONE	0 NEG NONE NONE	2 NEG NONE NONE
Potassium Water Silt Debris Sand/Dirt	ppm scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual	>20 >0.1 NONE NONE NONE	1 NEG NONE NONE NONE	0 NEG NONE NONE	2 NEG NONE NONE
Potassium Water Silt Debris Sand/Dirt Appearance	ppm scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual	>20 >0.1 NONE NONE NONE	1 NEG NONE NONE NONE NORML	0 NEG NONE NONE NONE NORML	2 NEG NONE NONE NONE NORML
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm scalar scalar scalar scalar scalar scalar	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG	0 NEG NONE NONE NORML NORML NEG	2 NEG NONE NONE NORML NORML NEG
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2	0 NEG NONE NONE NORML NORML NEG 2	2 NEG NONE NONE NORML NORML NEG 3
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm scalar scalar scalar scalar scalar scalar ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2 288	0 NEG NONE NONE NORML NORML NEG 2 303	2 NEG NONE NONE NORML NORML NEG 3 215
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2 288 0	0 NEG NONE NONE NORML NORML NEG 2 303 0	2 NEG NONE NONE NORML NORML NEG 3 215 0
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2 288 0 33	0 NEG NONE NONE NORML NORML NEG 2 303 0 34	2 NEG NONE NONE NORML NORML NEG 3 215 0 204
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2 288 0 33 <1	0 NEG NONE NONE NORML NORML NEG 2 303 0 34 <1	2 NEG NONE NONE NORML NORML NEG 3 215 0 204 2
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2 288 0 33 <1 95	0 NEG NONE NONE NORML NORML NEG 2 303 0 344 <1 77	2 NEG NONE NONE NORML NORML NEG 3 215 0 204 2 2 688
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2 288 0 33 <1 95 2432	0 NEG NONE NONE NORML NORML 2 303 0 2 303 0 34 <1 77 2317	2 NEG NONE NONE NORML NORML NEG 3 215 0 204 2 2 688 1504
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2 288 0 33 <1 95 2432 751	0 NEG NONE NONE NORML NORML 2 303 0 34 <1 77 2317 701	2 NEG NONE NONE NORML NORML NEG 3 215 0 204 2 688 1504 861
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2 288 0 33 <1 95 2432 751 868	0 NEG NONE NONE NORML NORML 2 303 0 34 <1 77 2317 701 701	2 NEG NONE NONE NORML NORML NEG 3 215 0 204 2 688 1504 861 1042
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML 2 288 0 33 <1 95 2432 751 868 3611	0 NEG NONE NONE NORML NORML 2 303 0 34 <1 77 2317 701 779 3071	2 NEG NONE NONE NORML NORML NEG 3 215 0 204 2 688 1504 861 1042 3310
Potassium Water Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m WC Method *Visual *Visual *Visual *Visual *Visual *Visual ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	>20 >0.1 NONE NONE NORML NORML	1 NEG NONE NONE NORML NORML NEG 2 288 0 33 <1 95 2432 751 868	0 NEG NONE NONE NORML NORML 2 303 0 34 <1 77 2317 701 701	2 NEG NONE NONE NORML NORML NEG 3 215 0 204 2 688 1504 861 1042

Contact/Location: RHETT DANIEL - AMELEMIL



Test Package : MAR 2 Contact: RHETT DANIEL Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369. rdaniel@imtowing.com \* - 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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