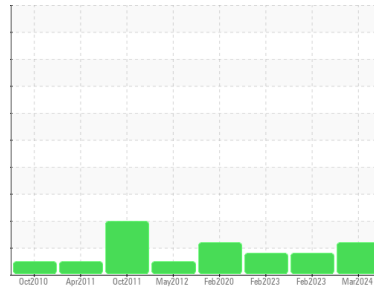


# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id  
**C-07**  
Component  
**Wind Turbine Gearbox**  
Fluid  
**ROYAL PURPLE SYNFILM GT 320 (65 GAL)**

## DIAGNOSIS

### Recommendation

Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil.

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of particulates present in the oil.

### Fluid Condition

The AN level is acceptable for this fluid.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>MHI020594</b>	MHI021643	MHI020650
Sample Date	Client Info		<b>09 Mar 2024</b>	06 Feb 2023	06 Feb 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>ABNORMAL</b>	ABNORMAL	ATTENTION

## WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>200	<b>24</b>	12	11	
Iron	ppm	ASTM D5185m	>200	<b>13</b>	9	10
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>30	<b>&lt;1</b>	0	<1
Lead	ppm	ASTM D5185m	>15	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>75	<b>3</b>	3	3
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		<b>0</b>	0	0
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	<1	5
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	90	<b>5</b>	<1	1
Calcium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Phosphorus	ppm	ASTM D5185m		<b>13</b>	11	13
Zinc	ppm	ASTM D5185m		<b>10</b>	0	8
Sulfur	ppm	ASTM D5185m		<b>21651</b>	20131	20091

## CONTAMINANTS

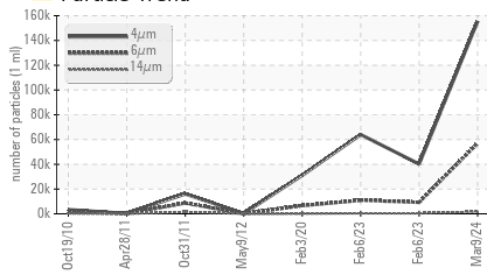
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>+30	<b>1</b>	1	3
Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	0	0
Water	%	ASTM D6304	>0.1	<b>0.003</b>	0.007	0.007
ppm Water	ppm	ASTM D6304	>1000	<b>36</b>	72.6	70.3

## FLUID CLEANLINESS

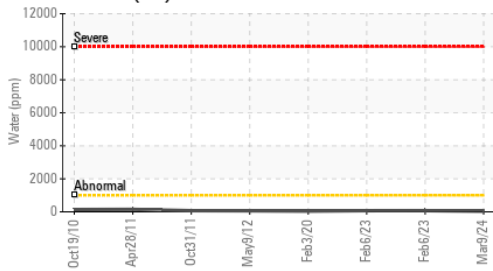
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>155421</b>	64018	40211
Particles >6µm	ASTM D7647	>5000	<b>▲ 56939</b>	▲ 10978	● 9242
Particles >14µm	ASTM D7647	>640	<b>▲ 1715</b>	429	381
Particles >21µm	ASTM D7647	>160	<b>181</b>	78	68
Particles >38µm	ASTM D7647	>40	<b>6</b>	2	1
Particles >71µm	ASTM D7647	>10	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	<b>▲ 24/23/18</b>	▲ 23/21/16	● 23/20/16

# OIL ANALYSIS REPORT

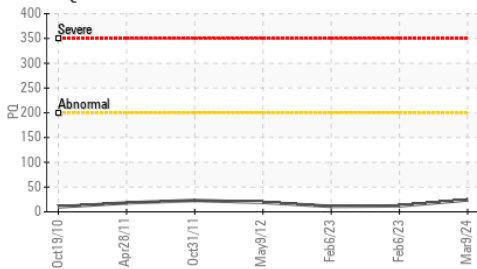
## Particle Trend



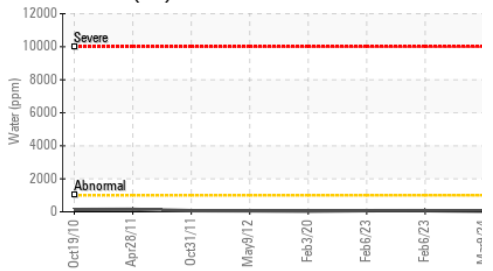
## Water (KF)



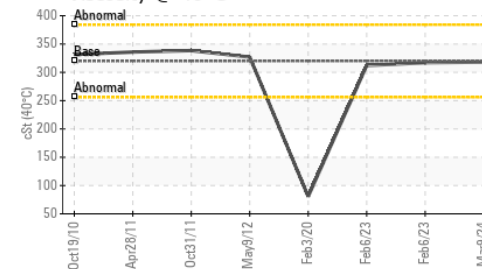
## PQ



## Water (KF)



## Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.25	<b>0.37</b>	0.44	0.44

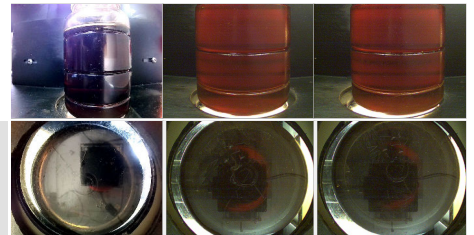
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>LIGHT</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	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
Free Water	scalar	*Visual		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	<b>318</b>	317	312

## SAMPLE IMAGES

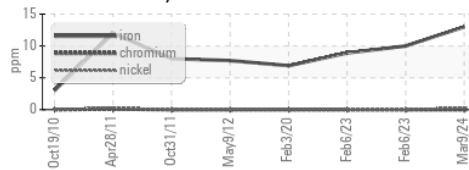
Color

Bottom

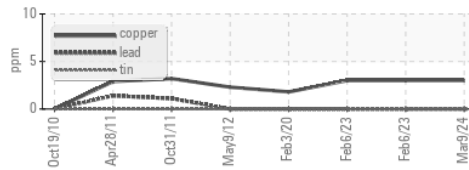


## GRAPHS

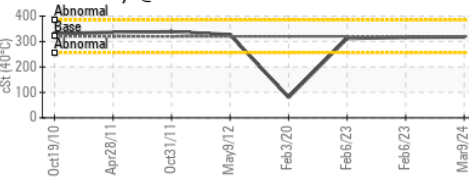
### Ferrous Alloys



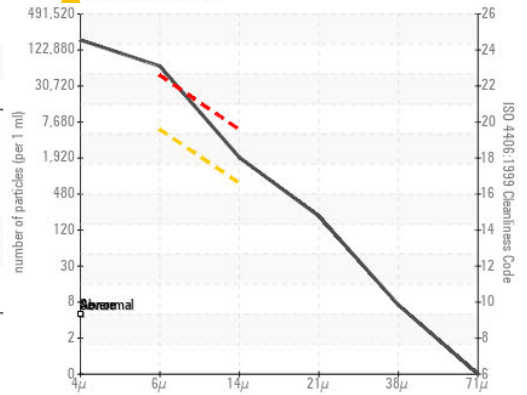
### Non-ferrous Metals



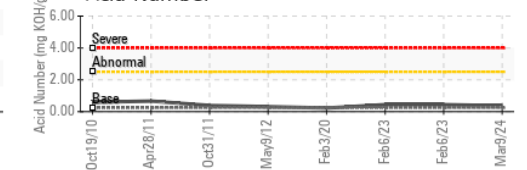
### Viscosity @ 40°C



### Particle Count



### Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : MHI020594

Lab Number : **06204592**

Unique Number : 11072053

Test Package : IND 2 ( Additional Tests: KF, PQ, PrtCont )

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - 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)

Received : 10 Jun 2024

Tested : 12 Jun 2024

Diagnosed : 12 Jun 2024 - Angela Borella

DIAMOND WTG - WHITE DEER SITE - MPS WD

PO BOX 872

WHITE DEER, TX

US 79097

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