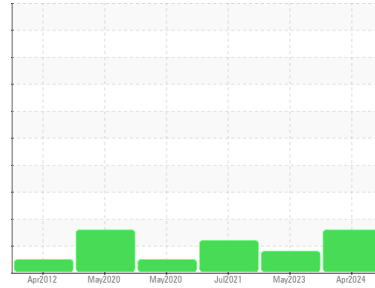


# OIL ANALYSIS REPORT

Sample Rating Trend



**WATER**



Machine Id

**H-04**

Component

**Wind Turbine Gearbox**

Fluid

**ROYAL PURPLE SYNFILM GT 320 (65 GAL)**

## DIAGNOSIS

### Recommendation

Check seals and/or filters for points of contaminant entry. We advise that you check for the source of water entry. Replace filter element and resample at later date. In case already attempted and cleanliness was not improved then proceed to replace oil. We advise that you follow the water drain-off procedure for this component. There is too much water present in this sample to perform a particle count.

### Wear

All component wear rates are normal.

### Contamination

Excessive free water present.

### Fluid Condition

The AN level is acceptable for this fluid.

## SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	<b>MHI026937</b>	MHI021603	MHI019384
Sample Date	Client Info	<b>16 Apr 2024</b>	01 May 2023	22 Jul 2021
Machine Age	hrs	<b>0</b>	0	0
Oil Age	hrs	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

## WEAR METALS

method	limit/base	current	history1	history2		
PQ	ASTM D8184	>200	<b>58</b>	22	46	
Iron	ppm	ASTM D5185m	>200	<b>23</b>	15	15
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	<1	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>30	<b>0</b>	2	0
Lead	ppm	ASTM D5185m	>15	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>75	<b>6</b>	3	6
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---	0
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	<1
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	1	3
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m	90	<b>5</b>	14	0
Calcium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Phosphorus	ppm	ASTM D5185m		<b>65</b>	50	185
Zinc	ppm	ASTM D5185m		<b>35</b>	0	0
Sulfur	ppm	ASTM D5185m		<b>18478</b>	19520	7210

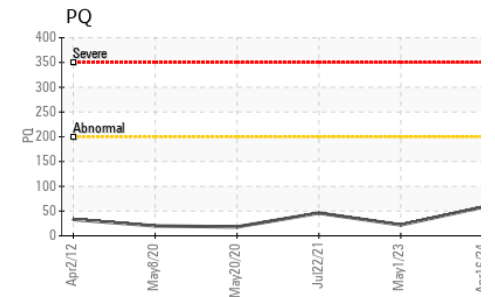
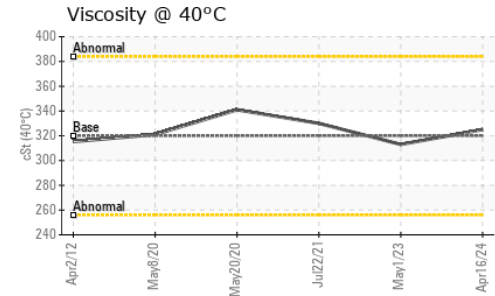
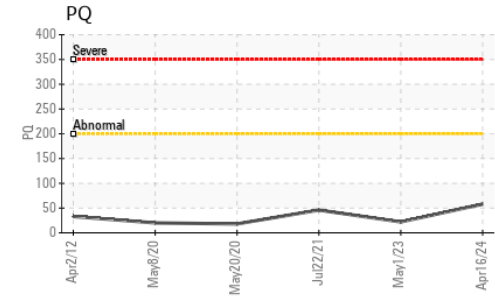
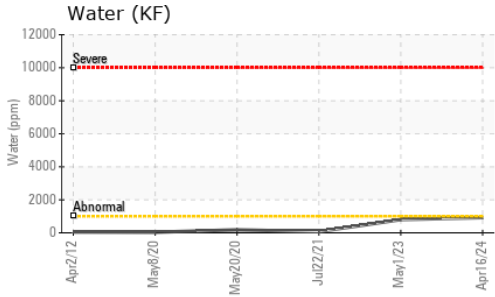
## CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>+30	<b>4</b>	<1	<1
Sodium	ppm	ASTM D5185m		<b>1</b>	0	0
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	<1	0
Water	%	ASTM D6304	>0.1	<b>0.092</b>	0.080	0.007
ppm Water	ppm	ASTM D6304	>1000	<b>920</b>	800	73.1

## FLUID CLEANLINESS

method	limit/base	current	history1	history2		
Particles >4µm	ASTM D7647			<b>---</b>	171908	231167
Particles >6µm	ASTM D7647	>5000		<b>---</b>	▲ 42902	▲ 166108
Particles >14µm	ASTM D7647	>640		<b>---</b>	314	▲ 32089
Particles >21µm	ASTM D7647	>160		<b>---</b>	20	▲ 3312
Particles >38µm	ASTM D7647	>40		<b>---</b>	1	22
Particles >71µm	ASTM D7647	>10		<b>---</b>	0	2
Oil Cleanliness	ISO 4406 (c)	>--/19/16		<b>---</b>	▲ 25/23/15	▲ 25/25/22

# OIL ANALYSIS REPORT

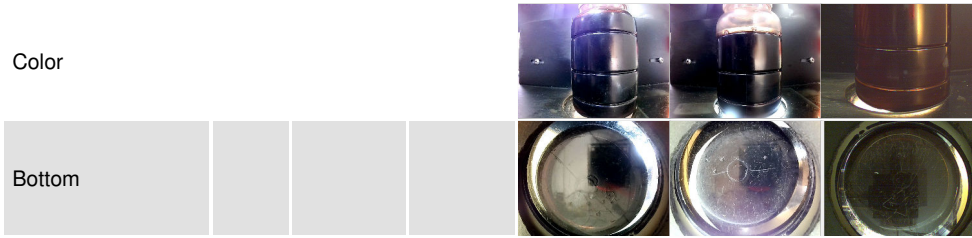


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.25	<b>0.48</b>	0.43	0.67

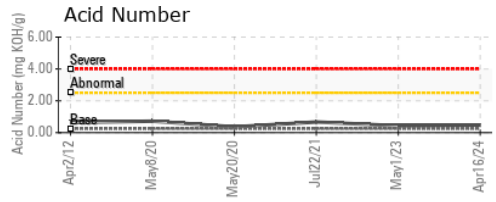
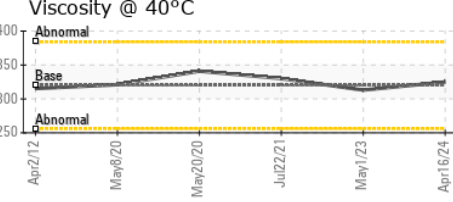
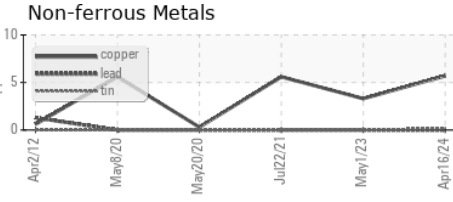
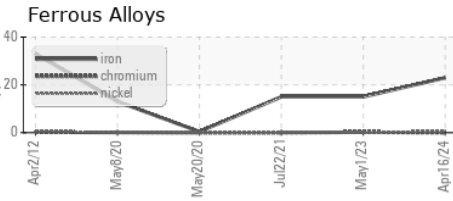
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	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>0.2%</b>	0.2%	NEG
Free Water	scalar	*Visual		<b>▲ 5.0</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	320	<b>325</b>	313	330

SAMPLE IMAGES		method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MHI026937 **Received** : 10 Jun 2024  
**Lab Number** : **06204586** **Tested** : 12 Jun 2024  
**Unique Number** : 11072047 **Diagnosed** : 12 Jun 2024 - Angela Borella  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

**DIAMOND WTG - WHITE DEER SITE - MPS WD**  
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 US 79097

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