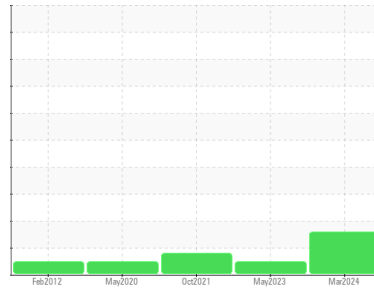


# OIL ANALYSIS REPORT

## Sample Rating Trend



ISO



Machine Id  
**H-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. The condition of the oil is acceptable for the time in service.

### SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>MHI021751</b>	MHI020769	MHI017108
Sample Date	Client Info		<b>21 Mar 2024</b>	24 May 2023	22 Oct 2021
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>	NORMAL	ABNORMAL

### WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184	>200	<b>18</b>	12	19
Iron	ppm	ASTM D5185m	>200	<b>3</b>	4
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	<1
Nickel	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	<1
Silver	ppm	ASTM D5185m		<b>0</b>	0
Aluminum	ppm	ASTM D5185m	>30	<b>0</b>	2
Lead	ppm	ASTM D5185m	>15	<b>0</b>	0
Copper	ppm	ASTM D5185m	>75	<b>10</b>	11
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0

### ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>0</b>	0
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0
Molybdenum	ppm	ASTM D5185m		<b>0</b>	<1
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0
Magnesium	ppm	ASTM D5185m	90	<b>&lt;1</b>	<1
Calcium	ppm	ASTM D5185m		<b>&lt;1</b>	0
Phosphorus	ppm	ASTM D5185m		<b>8</b>	0
Zinc	ppm	ASTM D5185m		<b>7</b>	0
Sulfur	ppm	ASTM D5185m		<b>20176</b>	18943

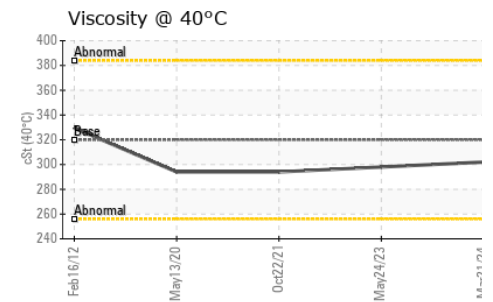
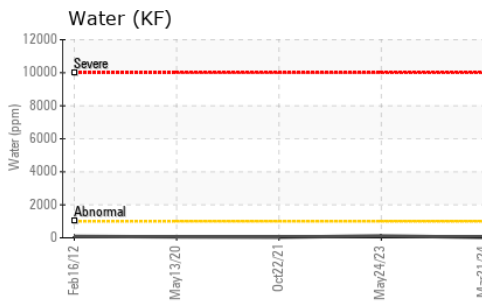
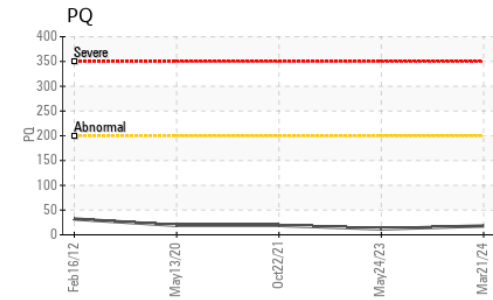
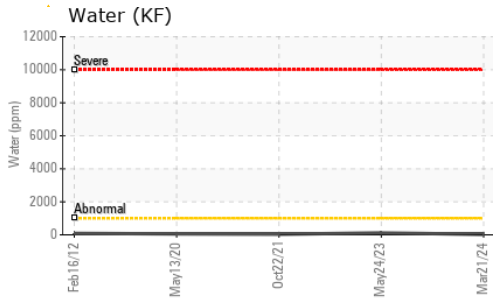
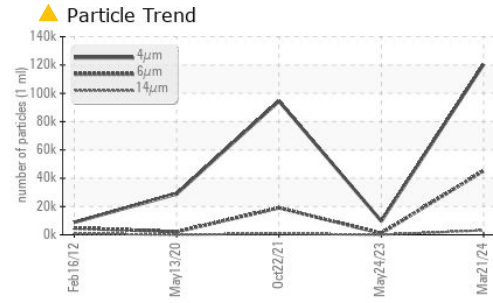
### CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	<b>2</b>	2
Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	0
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	1
Water	%	ASTM D6304	>0.1	<b>0.002</b>	0.012
ppm Water	ppm	ASTM D6304	>1000	<b>22</b>	122

### FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647		<b>120546</b>	9676	94422
Particles >6µm	ASTM D7647	>5000	<b>▲ 45155</b>	1040	▲ 19011
Particles >14µm	ASTM D7647	>640	<b>▲ 3133</b>	31	● 832
Particles >21µm	ASTM D7647	>160	<b>▲ 557</b>	10	146
Particles >38µm	ASTM D7647	>40	<b>9</b>	2	0
Particles >71µm	ASTM D7647	>10	<b>1</b>	1	0
Oil Cleanliness	ISO 4406 (c)	>--/19/16	<b>▲ 24/23/19</b>	20/17/12	▲ 24/21/17

# OIL ANALYSIS REPORT

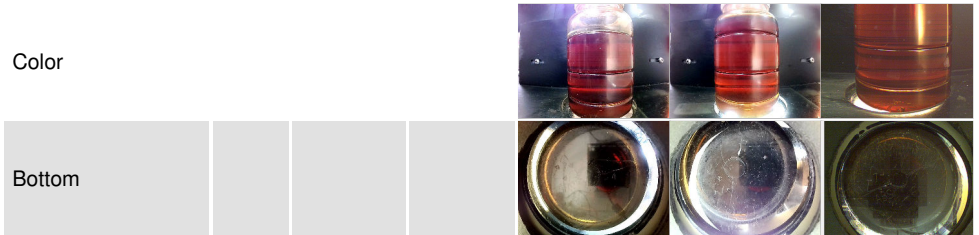


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D8045	0.25	<b>0.38</b>	0.40	0.42

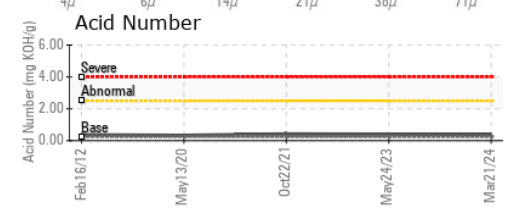
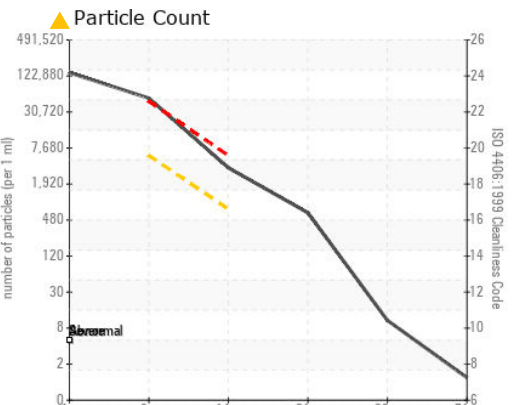
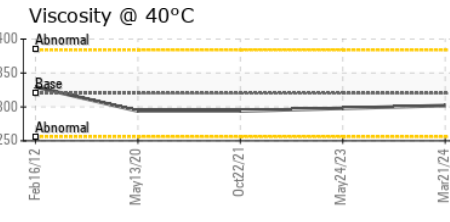
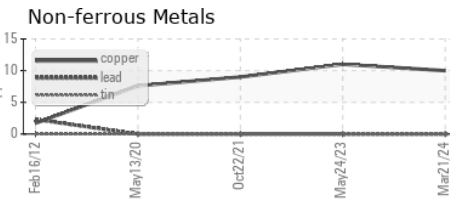
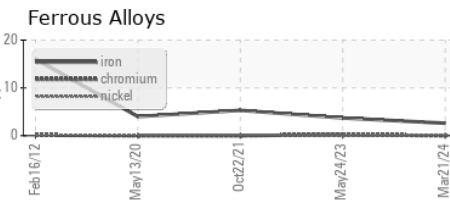
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar *Visual	NONE	<b>NONE</b>	NONE	LIGHT
Yellow Metal	scalar *Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar *Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar *Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar *Visual	NONE	<b>NONE</b>	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>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>302</b>	298	294

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



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MHI021751 **Received** : 10 Jun 2024  
**Lab Number** : **06204589** **Tested** : 11 Jun 2024  
**Unique Number** : 11072050 **Diagnosed** : 12 Jun 2024 - Angela Borella  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

**DIAMOND WTG - WHITE DEER SITE - MPS WD**  
 PO BOX 872  
 WHITE DEER, TX  
 US 79097

Contact: WESLEY CAMPBELL  
 wesley.campbell@diamondwtg.com

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)

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