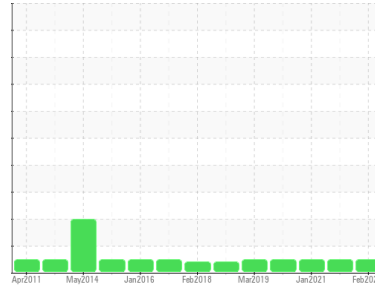


# OIL ANALYSIS REPORT

## Sample Rating Trend



**NORMAL**



Machine Id  
**E304 (S/N 6411-05)**

Component  
**Wind Turbine Gearbox**

Fluid  
**MOBIL MOBILGEAR SHC XMP 320 (74 GAL)**

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

#### Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>MHI026245</b>	MHI018328	MHI017453
Sample Date	Client Info			<b>17 Feb 2023</b>	07 Mar 2022	28 Jan 2021
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>84572</b>	79284	72944
Oil Changed	Client Info			<b>Not Changed</b>	Not Changed	Not Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

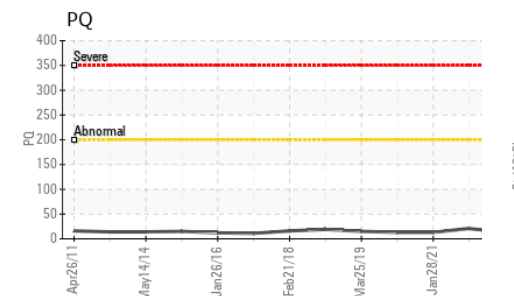
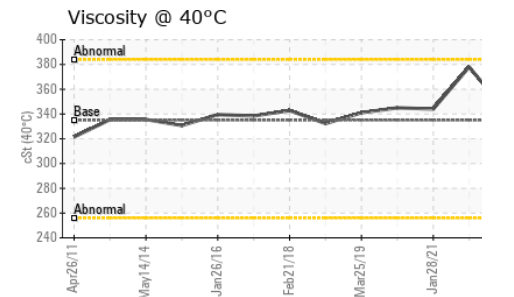
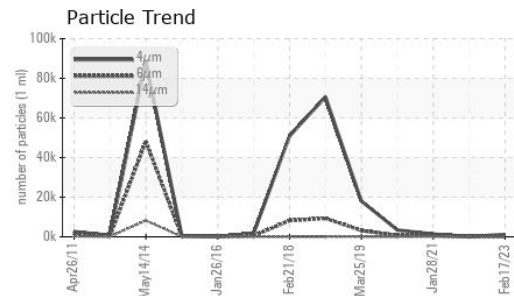
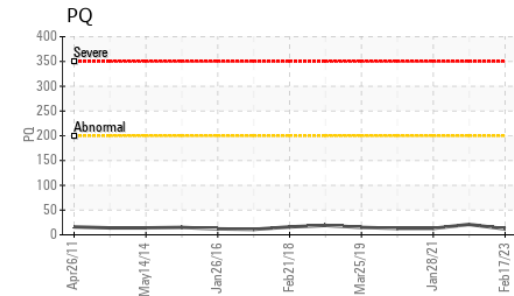
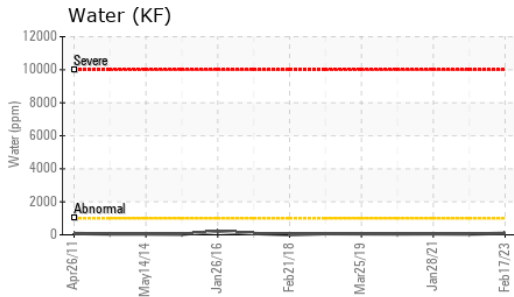
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>200	<b>12</b>	21	13
Iron	ppm	ASTM D5185m	>200	<b>6</b>	7	7
Chromium	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>3	<b>0</b>	1	0
Titanium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>30	<b>0</b>	0	<1
Lead	ppm	ASTM D5185m	>15	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>75	<b>35</b>	20	8
Tin	ppm	ASTM D5185m	>10	<b>0</b>	<1	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	0	<b>0</b>	0	3
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>0</b>	<1	0
Calcium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Phosphorus	ppm	ASTM D5185m	485	<b>345</b>	413	386
Zinc	ppm	ASTM D5185m	0	<b>13</b>	12	7
Sulfur	ppm	ASTM D5185m		<b>3702</b>	3617	3383

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+30	<b>&lt;1</b>	0	0
Sodium	ppm	ASTM D5185m	>15	<b>0</b>	0	<1
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	0
Water	%	ASTM D6304	>0.1	<b>0.009</b>	0.004	0.005
ppm Water	ppm	ASTM D6304	>1000	<b>91.3</b>	44.6	59.1

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		<b>1163</b>	189	1393
Particles >6µm		ASTM D7647	>5000	<b>269</b>	34	644
Particles >14µm		ASTM D7647	>640	<b>13</b>	4	101
Particles >21µm		ASTM D7647	>160	<b>4</b>	2	32
Particles >38µm		ASTM D7647	>40	<b>0</b>	0	2
Particles >71µm		ASTM D7647	>10	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>--/19/16	<b>17/15/11</b>	15/12/9	18/17/14

# OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.85	<b>0.98</b>	1.13	1.147

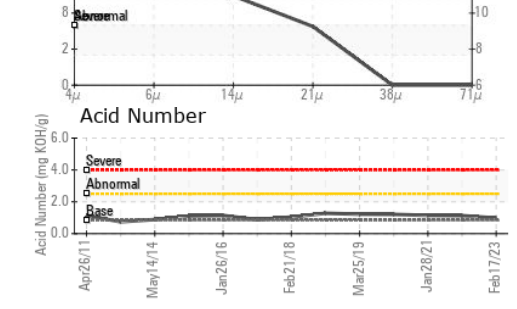
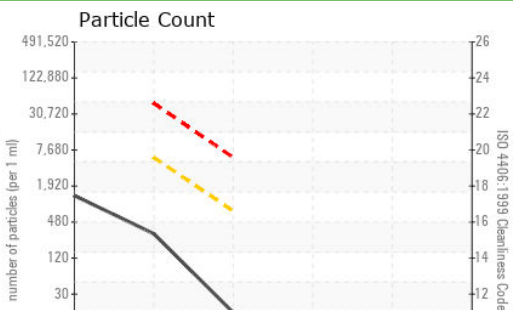
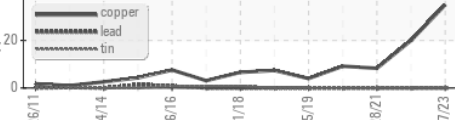
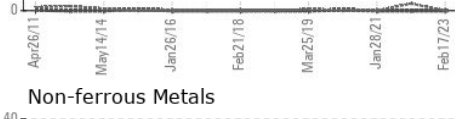
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	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	335	<b>343</b>	378	344

SAMPLE IMAGES		method	limit/base	current	history1	history2
---------------	--	--------	------------	---------	----------	----------



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MH1026245 **Received** : 21 Mar 2023  
**Lab Number** : 05798288 **Diagnosed** : 24 Mar 2023  
**Unique Number** : 10387972 **Diagnostician** : Jonathan Hester  
**Test Package** : IND 2 ( Additional Tests: KF, PQ, PrtCount )

**DIAMOND WTG - DILLON**  
P.O. BOX 880  
DESERT HOT SPRINGS, CA  
US 92240  
Contact: DANIEL BOYD  
daniel.boyd@diamondwtg.com  
T: (760)329-7171  
F: (760)329-7122

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)